MRU4304-006
Software Release Document
Rev. 18.3
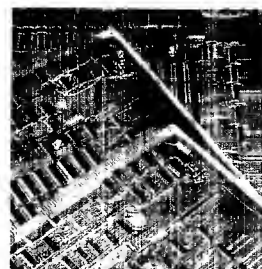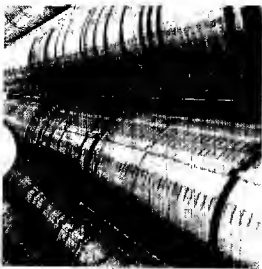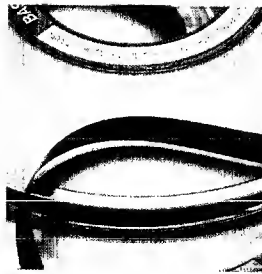
Software Release Document
Rev. 18.3
MRU4304-006

by

Anne W. Patenaude

This document contains information on technical changes and
enhancements made to Prime user software after Rev. 18.2 and released
at Rev. 18.3.

HOW TO ORDER TECHNICAL DOCUMENTS

U.S. Customers

Software Distribution
Prime Computer, Inc.
1 New York Ave.
Framingham, MA 01701
(617) 879-2960 X2053, 2054

Customers Outside U.S.

Contact your local Prime
subsidiary or distributor.

Prime Employees

Communications Services
MS 15-13, Prime Park
Natick, MA 01760
(617) 655-8000, X4837

INFORMATION Systems

Contact your Prime
INFORMATION system dealer.

SUGGESTION BOX

All correspondence on suggested changes to this document should be
directed to:

Anne W. Patenaude
Technical Publications Department
Prime Computer, Inc.
500 Old Connecticut Path
Framingham, Massachusetts 01701

Contents

CHAPTER 1

INTRODUCTION

REV. 18.3 SOFTWARE RELEASE DOCUMENT

This document contains information on technical changes and enhancements made to Prime user software after Rev. 18.2 and released at Rev. 18.3.

This guide includes information on the following topics:

- New software products released at Rev. 18.3

- Enhancements made to existing software

- Software problems fixed

- Documentation corrections, clarifications, and additions

- Outstanding software problems

- Installing Rev. 18.3

The information for each product begins on a new right-hand page. Therefore, users may more easily extract portions of this book and place them with the appropriate manuals.

Note

The Rev. 18.3 Software Release Document is designed as a supplement to main titles. It replaces the information, not the actual pages in other books. Therefore, the pagination of this book will not correspond to that of other titles.

The remainder of Chapter 1 contains information on the following topics:

- Overview of Rev. 18.3

- Prime's new numbering system for Technical Publications

- New Prime Technical Publications

- Installing Rev. 18.3

OVERVIEW OF REV. 18.3

New Software Products

Two new products are available at Rev. 18.3:

HELP: HELP is an on-line databank of information on PRIMOS commands, groups of commands, and general topics.

USAGE: USAGE is a system metering tool that allows operators and users to monitor several performance factors of PRIMOS's operation.

Enhancements Made to Existing Software

MAGNET: MAGNET has been completely rewritten and contains many new features. These features include Batch support, user-definable translation tables, and variable-length records. The new MAGNET subsystem is summarized in this document and is fully described in the new Magnetic Tape User's Guide (DOC5027-183). All old MAGNET subcommands (READ, WRITE, COPY, POSITION, and QUIT) and their dialogs are still supported by the new MAGNET.

<div align="center">Note</div>

The new MAGNET is a qualified release product and is not part of the Rev. 18.3 master disk. The master disk contains the old MAGNET. Users who wish to have the new MAGNET should ask their system analysts for it.

NETLINK: Several new commands have been added to NETLINK. These commands enable connection to (non-Prime) hosts that require full support ot the international parameter set. NETLINK enhancements are described in the PRIMENET section of Chapter 7 (COMMUNICATIONS).

Other Enhancements: Enhancements have also been made to the following software products:

Batch	Pascal
COBOL	PHYSAV/PHYRST
CPL	PL1G
DBMS	PMA
FORTRAN	PRIMOS
FORTRAN 77	SLIST
MAKE	SPOOL
MIDAS	Subroutines
NETCFG (PRIMENET)	VFINLIB

Problems Fixed

Problems in the following products have been corrected:

Batch	NETCFG (PRIMENET)
COBOL	NETLINK (PRIMENET)
CPL	Pascal
CRMPC	PHYSAV/PHYRST
DBMS	PL1G
DBMS/QUERY	PMA
DPTX	PRIME/POWER
FED	PRIMOS
FORMS	RJE
FORTRAN	RPG
FORTRAN 77	SEG
FUTIL	SPOOL
MAGSAV/MAGRST	VFTNLIB
MAKE	VPSD
MIDAS	

Documentation Modifications

This publication contains documentation corrections, clarifications, and additions for the <u>Software Installer's Guide</u> and for manuals on the following products:

BASIC (Interpretive)	NETLINK (PRIMENET)
BASIC/VM	Pascal
Batch	P850 (Halt Handling)
COBOL	PL1G
Condition Mechanism	PMA
CPL	PRIME/POWER
DBG	PRIMOS
DBMS	PT25 Terminal
DBMS/QUERY	RJE
FORTRAN	SEG
FUTIL	Subroutines
MIDAS	

Outstanding Problems

This document outlines outstanding problems in the following products:

CPL	MIDAS
DBMS	Pascal
DBMS/QUERY	PL1G
DPTX	PRIMOS
FORTRAN	

NEW BOOK NUMBERING SYSTEM

Prime is revising the numbering system for technical publications. For example, the old number for the FORTRAN 77 Reference Guide was IDR4029. The new number of the revision is:

DOC4029-183L   or   DOC4029-183P

The components of this number signify the following:

DOC   Document

4029   Individual book number

183   Rev. 18.3 (the Software Revision number at which the book was released)

L,P   L = loose leaf, P = perfect bound (-101B and -101A respectively in the old system, but only where loose leaf versions exist)

NEW BOOK TITLES

The following new technical publications are now available.

FORTRAN 77 Reference Guide (DOC4029-183)

This book is a programmer's guide to the FORTRAN 77 language as implemented on a Prime system. The reader is expected to be familiar with some version of FORTRAN, and with programming in general, but not necessarily with Prime computers. The book provides a general overview of FORTRAN 77 and describes Prime extensions to the language. It explains how to use the compiler, how to use compiler options, and how to load and execute programs. The book also contains many examples that are intended to assist a programmer in using a Prime system.

The FORTRAN 77 Reference Guide is a revision of IDR4029 (Rev. 17.4) and PTU2600-074 (Rev. 18.1). New material documented in this revision includes:

● The new filename suffix convention

● The new -FRN (floating point round) compiler option

● Additional DEBUG information

● The new NAMELIST statement

LQP 3175 Guide (IDR5024)

This book describes the operation of the Prime Letter Quality Printer (LQP) 3175 used in Prime's Office Automation System (OAS). The LQP 3175 is a serial impact printer that may be equipped with either a forms-tractor for continuous forms printing or a Cut Sheet Feeder 3176 for single sheet printing. Topics discussed in this book include operating instructions, day-to-day maintenance, paper loading, and minor trouble-shooting. In addition, the book contains suggestions on how to maintain high print quality.

Magnetic Tape User's Guide (DOC5027-183)

This book is for both novice and experienced users who work with magnetic tapes on Prime machines. Part I contains introductory material on magnetic tape concepts such as tape density, tape drives, record formats, and tape labels. Part II covers PRIMOS magnetic tape commands for both the operator and other users. Part III is devoted to PRIMOS magnetic tape subsystems, including the new MAGNET subsystem. Additional information is included in the Appendixes on character set tables, translation tables, and MAGNET.

Note

Since the new MAGNET is on qualified release, this book is currently available only through your system analyst.

Software Installer's Guide (IDR5028)

The Software Installer's Guide explains the installation of Prime software products at the user site. It is written for the user who is responsible for the installation of Prime software products. The user is expected to be familiar with PRIMOS and with system configuration techniques. The book contains information on installation command files and step-by-step directions both for the initial startup of the system and for initial customer installation of the software. The book also explains how to install updates and new products in an existing system and how to use the control panel to bootstrap PRIMOS II, Prime's single-user operating system. This version of the book covers installation of software for Rev. 17 and for Revs. 18.1 and 18.2. (Further information for updating to Rev. 18.3 is given in the Introduction of this document.)

Site Preparation Guide (IDR5029)

This book is written for the customer who must prepare for and coordinate the installation of Prime products. The information is intended to permit advanced planning and the preparation of sites, and to make the installation of Prime systems rapid and efficient. The Guide gives recommendations for site planning and includes a sample site planning exercise. The book also describes the electrical and

operating characteristics of all components currently marketed by Prime. In addition, the book defines the services Prime provides for those systems that qualify contractually. It is a total revision of, and replaces, the System Installer's Guide (PDR3105).

MEDUSA^{TM} 2-D User's Guide (IDR5303-101)

This guide introduces the user to the MEDUSA 2-D Design and Drafting System and describes how to use its salient features. It takes the user from drawing simple lines through drawing complex elements, and explains features such as dimensioning and cross-hatching.

MEDUSA Menu Reference Guide (IDR5304-101)

This guide describes the menu items provided with the MEDUSA Standard Menu (IDR5706). It details the commands that are generated each time the user performs a menu probe.

MEDUSA Commands Reference Guide (IDR5305-101)

This guide describes all the commands that can be used to drive the MEDUSA 2-D Design and Drafting System. The command guide is intended for users who need more commands than are provided in the standard menu.

MEDUSA 3-D User's Guide (IDR5306-101)

This guide describes the MEDUSA 3-D Modeling System. It describes how to generate 3-D models from 2-D drawings.

DBMS/QUERY Report Generator Casebook (IDR5650)

This book is for new Query users. It is a companion to IDR4607 and IDR4608. It illustrates, by use of numerous examples and a simple four-record data base, how to instruct QUERY to produce both simple and complex reports. The examples start with simple retrieval and display commands and take the user step-by-step through the more complex Report Generator statements. Illustrations include producing report covers, printing on specialized forms, changing page sizes, and using procedures to request standard reports.

MEDUSA Standard Menu (FDR5706)

This is the standard menu that is shipped with every MEDUSA workstation. It is secured to the workstation tablet and probed to generate commands. The menu is described in detail in the MEDUSA Menu Reference Guide (IDR5304).

INSTALLING REV. 18.3

This section contains:

- General information on installing Rev. 18.3

- Instructions for the master disk installation

- Information on SEGRUN* and its relation to the new MAGNET

- Command file notes

- Information on installing Batch

- Compatibility information concerning:

        COBOL and MIDAS
        CRPMC
        DBMS
        DBMS/QUERY
        MAGNET
        SEG

General Information

The initial Rev. 18 release was 18.1. Software updates to Rev. 18 contain all software generated after this initial release. Therefore, the Rev. 18.3 update contains the Rev. 18.2 update (but not the original Rev. 18.1 release). Because of the reorganization of much of Prime's software, the following procedure should be followed when updating any Rev. 18 Master Disk.

In update releases of Rev. 18, some source filenames may have suffixes that were not present at Rev. 18.1. Since the filenames are different in these cases, the System Administrator should delete the old directories to avoid having unnecessary files on the disk. In addition, many chargeable products now have their source and run files in separate directories. For example, at Rev. 18.1, the directory BASIC contained both the run files and the source files for the product. At Rev. 18.2 or above, there is a directory BASIC which contains the run files, and a directory BASICSRC which contains the source. If a user updates from 18.1 to 18.2 or above without deleting the old directories, he ends up with the source of both releases.

If you are updating from Rev. 17 or lower, you must install Rev. 18.1 prior to Rev. 18.3. If updating from 18.1 or 18.2, start with the current master disk. Restore the file UPINFO18.3 from your Rev. 18.3 update tape. This file should be the first logical tape. Using the UPINFO18.3 file as a guide, delete from your current disk any directories which are being replaced at 18.3. Entries in the UPINFO18.3 file which are directories are labelled (DIRECTORY). These are the ones which the user should delete prior to restoring his update tape. There is no need to delete the files being replaced in system directories (CMDNC0, SYSTEM, LIB, etc.) on the <M181A1>MFD since they will be overwritten when the tape is restored.

Following UPINFO 18.3 on the update tape are logical tapes A1, B1, and B2. To update your Master Disk, restore A1 onto your Master Disk partition M183A1, restore B1 onto partition M183B1, and restore B2 onto partition M183B2. The tape will overwrite the existing files that are on your disk. If you do not have three separate disk partitions on your master disk, restore the tape onto the partition where the files you are updating currently exist.

It is important that Rev. 18.3 PRIMOS and Rev. 18.3 shared libraries all be installed at the same time on a system. Rev. 18.3 shared libraries will not work with Rev. 18.2 PRIMOS. This is also true for most of the language products which do not have shared libraries.

At Rev. 18.3 the SPL library must be shared for many products to work. This can be done by running the file C_SHLB in UFD SYSTEM. The following commands should be added to the C_PRMO file in CMDNC0:

        SHARE SYSTEM>SP2121 2121
        R SYSTEM>SP4000 1/10

Master Disk Installation

The following are instructions and procedures to be followed for installation of software from the Master Disk.

Installation Command Files: Each chargeable product has a command file to copy necessary files from the Master Disk to system directories on the user's command disk. Each command file is named C_INSTALLproduct (example: C_INSTALLCOBOL) and resides in the directory containing the product (example: directory COBOL). These files end with the command COMINP -CONTINUE 6 followed by COMINP -END rather than the usual COMINP -END. This allows the command files to be invoked by a master command file to install many products at once. Listed below is the install command file for COBOL.

        /* C_INSTALLCOBOL, COBOL, JPC, 04/01/80
        /* installs COBOL into system directories
        /* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA. 02181
        /*
        FUTIL
        FROM COBOL

```
TO SYSTEM
COPY C_SHARECOBOL
FROM COBOL>CMDNC0
TO CMDNC0
COPY COBOL,NCOBOL
FROM COBOL>SYSTEM
TO SYSTEM
COPY C2014A,C2014B,C4000,CO2016
FROM COBOL>SYSOVL
TO SYSOVL
COPY C$$COD
FROM COBOL>LIB
TO LIB
COPY VCOBLB,NVCOBLB
QUIT
CO -CONTINUE 6
CO -END
```

C_CREATEALL File: Products may require more directories on the user's
command disk than those found on the A1 partition of the Master Disk.
For example, the installation of DBMS requires that there be a UFD
called DBMSLB on the user's command disk. A command file is supplied
in UFD SYSTEM on the A1 partition. This command file, C_CREATEALL,
creates all directories needed by all chargeable software. This
command file also includes commands to copy any additional files
required. This command file is run by the user prior to initial
installation of the product. The user should examine the file and
delete (or comment out) those products he has not purchased, then run
the command file. The following is a listing of the C_CREATEALL file.

```
/* C_CREATEALL, SYSTEM, JPC, 04/08/80
/* creates system directories needed to install chargeable software
/* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA.  02181
/*
ATTACH MFD              /* PASSWORD SHOULD BE ADDED
CREATE DBMSLB           /* REQUIRED FOR DBMS INSTALLATION
CREATE FORMS*           /* REQUIRED FOR FORMS INSTALLATION
/*
FUTIL                   /* COPIES FILES NEEDED FOR INITIAL INSTALLATION
FROM FORMS>FORMS*
TO FORMS*
UFDCPY
QUIT
/*
CREATE TOOLS            /* REQUIRED FOR PL1G INSTALLATION
CREATE POWER*           /* REQUIRED FOR POWER OR POWERPLUS INSTALLATION
CREATE POWRCM          /* REQUIRED FOR POWER OR POWERPLUS INSTALLATION
/*
FUTIL                       /* COPIES FILES FOR INITIAL INSTALLATION
FROM POWER>POWER*
TO POWER*
UFDCPY
QUIT
/*
```

```
FUTIL                      /* COPIES FILES FOR INITIAL INSTALLATION
FROM POWERPLUS>POWER*
TO POWER*
UFDCPY
QUIT
/*
CREATE FAM                 /* REQUIRED FOR PRINET OR X.25 INSTALLATION
CREATE QX80                /* REQUIRED FOR RJEX80 INSTALLATION
CREATE Q1004               /* REQUIRED FOR RJE1004 INSTALLATION
CREATE Q200UT              /* REQUIRED FOR RJE200UT INSTALLATION
CREATE QHASP               /* REQUIRED FOR RJEHASP INSTALLATION
CREATE QGRTS               /* REQUIRED FOR RJEGRTS INSTALLATION
CREATE Q7020               /* REQUIRED FOR RJE7020 INSTALLATION
CO -END
```

Share Command File: Each chargeable product that uses shared segments
has a command file called C_SHAREproduct (example: C_SHARECOBOL).
This file contains commands that will install the shared files when the
command file is invoked at the supervisor terminal. Each share command
file resides in the directory containing the product (example: COBOL).
These command files assume that the installation command files have
copied all required shared files and the share command file from the
directory containing them to UFD SYSTEM. The group of share commands
is preceded by the command OPRPRI 1 and followed by the command OPRPRI
0. The command files end with the command COMINP -CONTINUE 6 followed
by COMINP -END, rather than the usual COMINP -END.

```
/* C_SHARECOBOL, COBOL, JPC, 04/01/80
/* shares COBOL compiler and library
/* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA.  02181
/*
OPR 1
SHARE SYSTEM>C2014A 2014 700
SHARE SYSTEM>C2014B 2014 700
R SYSTEM>C4000 1/3
SHARE SYSTEM>CO2016 2016
SHARE 2014
OPR 0
CO -CONTINUE 6
CO -END
```

C_PRMO.TEMPLATE: The C_PRMO.TEMPLATE supplied with the Master Disk
contains commands to invoke each of the C_SHAREproduct command files.
A user should examine the template and delete those commands that
invoke share command files that the user has not purchased. The
C_PRMO.TEMPLATE is given below.

```
/* C_PRMO.TEMPLATE, PRIRUN, JPC, 04/03/80
/* template command file to boot PRIMOS
/* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA.  02181
/*
CONFIG -DATA               /* specify CONFIG file after -DATA
```

```
ADDISK                              /* specify local disks to be added
AMLC TTY                            /* specify AMLC lines
OPR 1                              /* SHARE REQUIRES OPR 1
SHARE SYSTEM>ED2000 2000     /* SHARE the editor  -  ED
SHARE SYSTEM>S2050 2050 700      /* BRING UP FORTRAN SHARED LIBRARY
R SYSTEM>SP4000 1/1
SHARE 2050
SHARE SYSTEM>SP2121 2121
R SYSTEM>SP4000 1/10
OPR 0
PROP PR0 -START              /* START SPOOLER PHANTOM
PH BATCHQ>PH_GO       /* STARTUP BATCH MONITOR
CO SYSTEM>C_SHAREBASICV 7    /* SHARE BASICV COMPILER
CO SYSTEM>C_SHARECOBOL 7     /* SHARE COBOL COMPILER AND LIBRARY
CO SYSTEM>C_SHAREDBG 7       /* SHARE DEBUGGER
CO SYSTEM>C_SHAREDBMS  7      /* SHARE DBMS
CO SYSTEM>C_SHAREDPTX-DSC 7    /* SHARE DPTX-DSC
CO SYSTEM>C_SHAREDPTX-TCF 7    /* SHARE DPTX-TCF
CO SYSTEM>C_SHAREFORMS 7        /* SHARE FORMS LIBRARY
CO SYSTEM>C_SHAREF77 7         /* SHARE F77 COMPILER
CO SYSTEM>C_SHAREMIDAS 7        /* SHARE MIDAS LIBRARY
CO SYSTEM>C_SHAREPASCAL 7       /* SHARE PASCAL COMPILER
CO SYSTEM>C_SHAREPL1 7       /* SHARE PL1 COMPILER
CO SYSTEM>C_SHAREPL1G 7      /* SHARE PL1G COMPILER
CO SYSTEM>C_SHAREPOWER 7            /* SHARE POWER
CO SYSTEM>C_SHAREPOWERPLUS 7       /* SHARE POWERPLUS
CLOSE 7
/* SET THE DATE AND TIME **********
CO  -END
```

UFD SYSTEM on the A1 partition of the Master Disk contains a command
file called C_INSTALLALL that will install all chargeable products from
the Master Disk. This command file assumes that the C_CREATEALL
command file has been run or that this is not the initial installation
time of the products. The user should examine that file, delete those
products he has not purchased, and run the file to install those
products he has purchased. The C_INSTALLALL file is listed below.

```
/* C_INSTALLALL, SYSTEM, JPC, 02/04/81
/* installs all products from the Master Disk
/* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA.  02181
/*
/* Note -- When installing DBMS, PRINET & X.25 pauses are encountered
/*         while running the command files to allow you to delete
/*         existing segment directories. If you are running the install
/*         files as part of the master c_install_all command file it is
/*         necessary to type 'co continue 22' rather than 'co continue'
/*         to resume the command file properly after the pause.
/*
CO BASIC>C_INSTALLBASIC 22
CO BASICV>C_INSTALLBASICV 22
CO COBOL>C_INSTALLCOBOL 22
```

```
CO  DBG>C_INSTALLDBG 22
CO  DBMSDEF>C_INSTALLDBMSDEF 22
CO  DBMSEX>C_INSTALLDBMSEX 22
CO  DBMSFIN>C_INSTALLDBMSFIN 22
CO  DBMSCOB>C_INSTALLDBMSCOB 22
CO  DBMSLGCL>C_INSTALLDBMSLGCL 22
CO  DPTX-DSC>C_INSTALLDPTX-DSC 22
CO  DPTX-TSF>C_INSTALLDPTX-TSF 22
CO  DPTX-TCF>C_INSTALLDPTX-TCF 22
CO  FORMS>C_INSTALLFORMS 22
CO  FED>C_INSTALLFED 22
CO  FTN>C_INSTALLFTN 22
CO  F77>C_INSTALLF77 22
CO  MIDAS>C_INSTALLMIDAS 22
CO  PASCAL>C_INSTALLPASCAL 22
CO  PL1G>C_INSTALLPL1G 22
CO  PL1>C_INSTALLPL1 22
CO  POWERPLUS>C_INSTALLPOWERPLUS 22
CO  PRINET>C_INSTALLPRINET 22
CO  RJEX80>C_INSTALLRJEX80 22
CO  RJE1004>C_INSTALLRJE1004 22
CO  RJE200UT>C_INSTALLRJE200UT 22
CO  RJEHASP>C_INSTALLRJEHASP 22
CO  RJEGRTS>C_INSTALLRJEGRTS 22
CO  RJE7020>C_INSTALLRJE7020 22
CO  RPG>C_INSTALLRPG 22
CO  VISTA>C_INSTALLVISTA 22
CO  X.25>C_INSTALLX.25 22
CLOSE 22
CO -END
```

A1 Partition: The A1 partition of the Master Disk contains PRIMOS and
utilities.   It contains system directories needed to run this   software
and other   directories   that   contain the source of this software. The
command file C_INSTALLSTD is in directory SYSTEM on the A1 partition.
This command file contains commands to copy the systems directories of
partition A1 to the user's command disk.   The   user   must CREATE the
directories listed in that command file if they do not already exist on
his command disk.   The user must also modify the partition designator
in the command file to refer to a specific release of the Master Disk.
An example is: A1 to M183A1. The following is a listing of the
command file C_INSTALLSTD.


```
/* C_INSTALLSTD, SYSTEM, JPC, 04/08/80
/* Installs PRIMOS and utilities from the Master Disk
/* Copyright (C) 1980, Prime Computer, Inc., Wellesley, MA.   02181
/*
FUTIL
FROM <A1>CMDNC0
TO CMDNC0
UFDCPY
FROM <A1>DOS
TO DOS
```

```
UFDCPY
FROM <Al>LIB
TO LIB
UFDCPY
FROM <Al>SPOOLQ
TO SPOOLQ
UFDCPY
FROM <Al>SYSCOM
TO SYSCOM
UFDCPY
FROM <Al>SYSOVL
TO SYSOVL
UFDCPY
FROM <Al>SYSTEM
TO SYSTEM
UFDCPY
F <Al>PRIRUN
TO PRIRUN
UFDCPY
F <Al>BATCHQ
TO BATCHQ
UFDCPY
FROM <Al>RJECOM   /* RJECOM is needed only if RJE products are installed
T RJECOM
UFDCPY
FROM <Al>HELP*
TO HELP*
UFDCPY
QUIT
CO -END
```

Command Files Run Order: Each command file listed below should be examined, modified, and if appropriate, run in the following order:

Command File	Directory
C_CREATEALL	SYSTEM
C_INSTALLSTD	SYSTEM
C_INSTALLALL	SYSTEM
C_PRMO.TEMPLATE	PRIRUN

After C_PRMO.TEMPLATE is examined and modified, it should be moved to UFD CMDNCO and renamed C_PRMO.

SEGRUN* and MAGNET

SEGRUN* is a system directory and should remain on the system at all times. This directory is currently being used only by the new MAGNET (presently on qualified release). However, at future releases SEGRUN* will be used by other software.

The new MAGNET is too large to be run as a single 1-segment program. Therefore, the SEG file for the new MAGNET is installed in the directory SEGRUN* and an R-mode interlude, MAGNET, is placed into CMDNC0.

Command File Notes

The C_SHLB command file was modified to include the share of SPLLIB.

A comment line was removed from a FUTIL command line in the file C_INSTALLSTD in UFD SYSTEM. FUTIL command lines cannot accept comments.

Installing Batch

The major change to Batch at Rev. 18.3 is the installation of a new queue control file management system. It is similar in many respects to the old one, but is faster.

Because of the new queue mechanism, all sites which install Rev. 18.3 Batch must invoke the command file C_RSET while attached to BATCHQ as an owner. C_BDIF may also be run, but it creates a new (null) BATDEF file, which is not necessary; old BATDEF files (from Rev. 18.1) will work under Rev. 18.3 Batch.

Otherwise, Rev. 18.3 Batch is completely compatible with Rev. 18.1 Batch (its last release).

Compatibility Issues

All products require a Rev. 18 operating system (PRIMOS), unless otherwise stated. The following products have special compatibility requirements:

- COBOL and MIDAS

- CRMPC

- DBMS

- DBMS/QUERY

- MAGNET

- SEG

COBOL and MIDAS: MIDAS and COBOL use shared segment '2014. MIDAS has been moved to make more space for COBOL. As a result. Rev. 18.2 COBOL will not run with Rev. 18.3 MIDAS. Similarly, Rev. 18.3 COBOL will not run with any MIDAS library below Rev. 18.3. This situation is described more fully under COBOL in Chapter 3 (LANGUAGES).

CRMPC: CRMPC requires a Rev. 18.3 operating system (PRIMOS) to allow the error recovery for card readers described in Chapter 4 (UTILITIES).

DBMS: Rev. 18.3 DBMS requires a Rev. 18.2 (or higher) release of PRIMOS and SEG.

DBMS/QUERY: Rev. 18.3 DBMS/QUERY requires a Rev. 18.3 DBMS and a Rev. 18.3 operating system (PRIMOS).

MAGNET: CPL is required if users wish to take advantage of the global variables linkage facilities of the new MAGNET.

SEG: SEG now automatically loads SPLLIB whenever the Pure FORTRAN Library is loaded. The subcommands LI and PL do this. The result is that Rev. 18.3 SEG cannot be run on any system which does not have SPLLIB.

Rev. 18.3 SEG requires Rev. 18 PRIMOS, Rev. 18 PFTNLIB, and Rev. 18.3 SPLLIB.

Rev. 18.3 SEG.BUILD.CPL will not operate correctly with Rev. 18.2 SEG, but is compatible with all earlier versions of Rev. 18 SEG.

CHAPTER 2

SYSTEM ADMINISTRATOR

BATCH

NEW FEATURES

C_RSET and C_BDIF: The C_RSET and C_BDIF files in BATCHQ have been
changed to delete files in BATCHQ which are used as "flags" or "locks".
These files are:

File	Function
LOCK.B	Used to lock the database
VALID.	Validates the database when the monitor is running, locks it when *FIXBAT is running
MON.ST	Validates monitor logout when the monitor is not running, is also the flag to tell running the monitor to shut down
MON.GO	Flag to tell the monitor to start up
ERROR.	Stores error information

Deleting LOCK.B will force its re-creation by Rev. 18.3 Batch, which
will cause LOCK.B's read/write lock to be set to 1 rather than left at
zero.   ERROR. is recreated by C_RSET and C_BDIF as a null file, so that
a failure even when the disk is full will be logged.   VALID. is
recreated, but *FIXBAT will set its read/write lock each time it runs.
MON.ST is recreated, as it validates VALID. when IN.USE is not in use.
MON.GO is not recreated.

Also, C_RSET and C_BDIF will now explicitly set the read/write lock of
the IN.USE file to 1. This file is opened by the monitor while it is
running, and other parts of Batch attempt to delete it to determine if
the monitor is still running.

*FIXBAT: The *FIXBAT program now sets the read/write   lock   of
BATCHQ>VALID. to 1 when it runs. (Because it does not use SRCH$B to
create it, it must do the setting itself.) *FIXBAT will also set the
BATCHQ>O_LOG read/write lock to 2 when it runs (if logging is turned
on).   That way, users may read O_LOG while it is in use by the monitor.

Note

The last one or two lines of output by the monitor are generally not readable in O_LOG until the file is closed by the monitor (by logging out).

BATDEF: The Batch monitor will now reset the read/write lock of the BATDEF file to 1 whenever it notices that it has strayed from that value. Whenever it does this, it will send the message "Changing BATDEF rwlock from x to 1." to the log file, where "x" is the old read/write lock value. When it first runs, the monitor will initially set the read/write lock of BATDEF to 1, but it will output no message concerning the old value. (It does not bother to determine what the old value is.)

This procedure occurs for the following reason: While Batch will always create BATDEF with a read/write lock of 1, a system administrator may use FUTIL or some such utility to copy a new version of BATDEF, perhaps resetting the read/write lock value.

IN.USE: The Batch monitor now sets the read/write lock of IN.USE whenever it starts up, as the monitor deletes IN.USE first to determine whether a monitor is already running.

PROBLEMS FIXED

Multiple Monitors Error Message: The "Multiple monitors illegal" message is now reliably sent whenever an attempt is made to spawn one Batch monitor while another is running, no matter what that monitor is doing (running *FIXBAT or *MONITR, or even in between).

Date and Time Checks: The checks in INIT$B and WAIT$B which make sure that the system date and time are correctly set have been updated to recognize "00" (ASCII) as an illegal date. This will prevent FIXBAT from running before the system date and time are set. This will also therefore prevent the message "Waiting for BATCH SYSTEM -START" from being output until sometime after the date and time are set.

Protection Keys: Throughout Batch, particularly in the job submission, spawning, and abortion code, Batch now uses the protection keys <4 0> when protecting an internal command file so that Batch may delete it. Previously, Batch used <7 0>, which left a small window of time during which another process might successfully open that file for reading and/or writing.

By protecting to <4 0> instead, no other process will be able to open the file, yet the protecting process will be able to delete it. (The 4 signifies "delete" rights.)

BATCH SYSTEM Command: The BATCH SYSTEM -START/-STOP commands are fixed to output reasonable error messages if the monitor has not started. Previously, confusing error messages such as "Illegal name" or "Not found" would result in this case.

Held Jobs: The "held jobs in a queue" problem has been fixed. Previously, if queue A was defined before queue B, and all jobs in queue A were in the "held" state, no jobs in queue B would ever be executed.

Job Submission from System Console (Error): Previously, an attempt to run *MONITR from the system console would cause meaningless output. This problem has been fixed, so that now the correct message is output. This message is "Can't process batch jobs from system console."

-ACCEPT Message: A problem in the ACPT$B routine caused the attempt to output the "I have reset your message state to -ACCEPT" message to fail. The message was not in the correct format for internal Batch string manipulation routines. This is now fixed.

P850 HALT HANDLING

DOCUMENTATION CORRECTION

Since the P850 contains two instruction stream units (ISUs), it is necessary first to determine which stream caused the halt. This is done via the VCP on the supervisor terminal by typing:

    A 4/176106 (CR)

A number is displayed. If that number is 41004, stream #1 (ISU-1) has halted, and the correct halt address is given in the "Halted at xxxx/yyyyyy" message.

If the number displayed is 102010, stream #2 (ISU-2) has halted, but the halt address is not displayed. Type a slash (/) after the number to reset the VCP so that it can accept the next command. The carriage will return automatically.

You may determine the halt address of stream #2 by accessing the PRIMOS micro-code crash register dump (an area of memory). Do not do a SYSCLR prior to executing this procedure. Type:

    A 14/2516 (CR)

A number will be displayed. Type a (CR) to access the next location (14/2517). A second number will be displayed. These two numbers give the halt address of stream #2.

Type / and then type:

    A 14/2556 (CR)

A number will be displayed. Type a (CR) to access the next location (14/2557). A second number will be displayed. These two numbers give the DSWPARITY error information for stream #2.

Type / to return to control panel mode.

Add this discussion to Handling Halts Under PRIMOS on page 10-2 of the System Administrator's Guide, PDR3109. This discussion also replaces the inaccurate discussion under 850 Halt Handling that appeared on page 2-2 of the Software Release Document for Rev. 18.2, MRU4304-005.

REV. 0   2 – 6

USAGE

USAGE is a system metering tool that allows operators and users to monitor several performance factors of PRIMOS's operation. Both manual and automatic sampling modes are available.

The command format is:

    USAGE [options]

Options may be selected in any order from the list below:

Option   Meaning

-USER   Causes system and per-user metering information to be displayed at each sample time. This is the default mode of operation.

-DISK   Causes system and disk metering information to be displayed at each sample time.

-ALL   Causes system, per-user, and disk metering information to be displayed at each sample time.

-FREQ n   Selects automatic sampling every n seconds (n must be an integer in the range 1 to 32767.) It is not recommended that n be less than 30. If -FREQ is not given, manual sampling is selected. (See below.)

-TIMES n   Specifies the total number of samples to be taken if automatic sampling is in effect. The command will terminate after n sets of data have been printed. n must be an integer in the range 1 to 32767. If -TIMES is not specified, sampling continues indefinitely.

-BRIEF   Specifies that a short form of output is to be produced. This form presents an overview of what processes and users are consuming system resources. The default long form produces additional information.

MANUAL SAMPLING

If manual sampling is desired, do not specify the -FREQ or -TIMES options. USAGE will be invoked each time a "START" command is issued, printing the most recent differential values. After the sample is taken, USAGE will pause to the command level, allowing other commands to be entered.

It is not recommended that manual sampling times be less than 30 real seconds. No options are permitted with "START".

An example of the command format for manual sampling is:

    OK, USAGE -BRIEF
    [USAGE 18.3]
    Type "START" to continue.

    OK, START

EXAMPLE OF AUTOMATIC SAMPLING

    OK, USAGE -FREQ 1800 -TIMES 10

PRIMOS will monitor the system 10 times, with an interval of 1800 seconds (30 minutes) between each sampling, for a period of 5 hours (1800 seconds x 10 times / 3600 seconds-per-hour). The long form of data display appears in the following format:

[USAGE 18.3]

10/01/81 14:40:01.20 DTIME=   29.82 CPTOT= 9272.42 IOTOT= 2279.54
                                        CP=   6.15   I/O=   4.44

%CPU	%IDL1	%IDL2	%ERR	%IO	%OVLP	IO/S	PF/S
10.30	90.89	81.54	1.97	14.87	0.00	7.78	3.99

%CLK	%FNT	%AML	%MPC	%PNC	%SLC	%GPPI	%DSK
1.57	0.03	1.07	0.00	0.13	0.00	0.00	0.23

LOCATE	%MISS	%FND	%SAME	%SHARE	LOC/S	LM/S
1308	6.35	84.17	9.48	0.00	43.86	2.78

DISK	QWAITS	%QWAIT	DMAOVR	%DMAOV	HANGS	%HANG
232	0	0.00	0	0.00	0	0.00

USR	LOGNAM	MEM	CPTIME	DCP	%CP	IOTIME	DIO	%IO
1	SYSTEM	662	528.035	0.225	0.755	161.476	0.294	0.986
4	PEGASUS	36	36.712	0.017	0.058	30.558	0.000	0.000
11	NINA	9	9.424	0.043	0.144	1.227	0.000	0.000
16	SRG	252	67.214	4.060	13.613	27.500	3.909	13.107
23	SHARON	154	199.009	1.397	4.683	46.012	0.000	0.000
32	ROO	36	1.287	0.003	0.010	1.600	0.000	0.000
49		3	0.372	0.154	0.515	0.000	-0.500	-1.676
84		5	25.844	0.120	0.402	0.000	0.000	0.000
88	SYSTEM	13	75.980	0.056	0.189	13.185	0.000	0.000
98	SHINE	24	0.480	0.075	0.251	0.442	0.000	0.000

DISK	I/O	%I/O	TIME	%TIME
'26	97	41.81	2.09	47.13
0	97	41.81	2.09	47.13
'27	135	58.19	2.35	52.87
0	135	58.19	2.35	52.87

METERING INFORMATION FOR THE SYSTEM

Definitions for USAGE's screen display are listed below. All
percentages are based on elapsed time, or CPU time, in the last
sampling interval, unless otherwise stated.

Display	Definition
DTIME	The number of real seconds elapsed between the previous and current sample times.
CPTOT	The number of CPU seconds charged to all user processes since cold start.
IOTOT	The number of I/O (disk) seconds charged to all user processes since cold start.
CP	The number of CPU seconds charged to all user processes in the current sampling interval.
I/O	The number of I/O (disk) seconds charged to all user processes in the last sampling interval.
%CPU	The percentage of real time during which CPU time was charged to user processes. This can be loosely interpreted as the percent of useful utilization of the CPU.
%IDL1	The percentage of idle CPU time. (On a P850, this figure is the percentage of Stream #1 (ISU-1 idle time.) This value can be roughly interpreted as the percent of total CPU time not involved in user processes.
%IDL2	The percentage of idle CPU time for the P850 Stream #2 (ISU-2.) This number is always zero on non-P850 configurations.
%ERR	The percentage of CPU utilization not otherwise accounted for, and presumed taken by interrupts, scheduler overhead, process exchange, and similar operations. This value can be negative if one or more processes have been overcharged with respect to CPU time.
%IO	The percentage of DTIME during which I/O (disk) was charged to user processes. This can be loosely interpreted as the percentage of time disk I/O was in progress.
%OVLP	The estimate of the amount of I/O (disk) traffic that has been overlapped with non-idle CPU time during the last sampling interval.
IO/S	The I/O (disk) request rate in operations per second, over the last sampling interval.

PF/S   The page fault frequency in faults per second, over
          the last sampling interval.

%CLK   The percentage of CPU time used by the real-time clock
          service process.

%FNT   The percentage of CPU time used by the P850 slave ISU
          real-time "frontstop" process.

%AML   The percentage of CPU time used by the AMLC process.

%MPC   The percentage of CPU time used by the MPC (printer,
          punch, reader) processes.

%PNC   The percentage of CPU time used by the Primenet Node
          Controller process.

%SLC   The percentage of CPU time used by the SMLC process.

%GPPI   The percentage of CPU time used by the GPPI (general
          purpose controller) processes.

%DSK   The percentage of CPU time used by disk driver
          processes.

LOCATE   The total number of calls made in the last sampling
          interval   to the file system associative   buffer
          manager, LOCATE. ,

%MISS   The percentage of calls to LOCATE in the last sampling
          interval that resulted in a disk read being performed
          (i.e., the percentage of LOCATE misses).

%FND   During the last sampling interval, the percentage of
          calls to LOCATE that found the desired record already .
          in the associate buffers.

%SAME   The percentage of calls to LOCATE in the last sampling
          interval to access the same record the process had
          just previously located.

%SHARE   The percentage of calls to LOCATE in the last sampling
          interval for a record that was already in use by
          another process.

LOC/S   The LOCATE use rate in calls per second, over the last
          sampling interval.

LM/S   The LOCATE miss rate, in misses (disk reads) per
          second, over the last sampling interval.

DISK   The total number of disk I/O operations performed in the last sampling interval.

QWAITS   During the last sampling interval, the number of times that a process had to wait to get a disk request block allocated.

%QWAIT   The percentage of disk I/O requests during the last sampling interval that required waiting for a disk request block.

DMAOVR   The number of disk operations during the last sampling interval that resulted in DMA overrun errors.

%DMAOV   The percentage of disk operations during the last sampling interval that resulted in DMA overruns.

HANGS   The number of disk operations during the last sampling interval that caused the disk controller to hang and time out.

%HANG   The percentage of disk operations in the last sampling interval that caused controller hangs.

METERING INFORMATION FOR EACH USER

USR   The user number of the user process.

LOGNAM   The login name of the user process.

MEM   The total number of physical pages resident in memory (at the time the page control databases were examined) that belong to the user's segments. (Segment numbers 0 through '3777 are charged to user 1.) This value can be taken as a rough estimate of the demand the user is placing on virtual memory management. If the system is paging at a reasonably high rate, this value can also approximate the size of the user's average working set over reasonably short intervals.

CPTIME   The CPU time, in seconds, used by this user since login.

DCP   The CPU time, in seconds, used by this user during the last sampling interval.

%CP   The percent of total CPU time used by this user during the last sampling interval.

IOTIME   The I/O (disk) time, in seconds, used by this user since login.

DIO   The I/O (disk) time, in seconds, used by this user during the last sampling interval.

%IO   The percent of real time (over the last sampling interval) during which I/O (disk) was in progress for this user.

METERING INFORMATION FOR DISK I/O

DISK   The octal controller I/O address and the disk drive unit number.

I/O   The number of disk I/O operations for that controller or unit in the last sampling interval.

%I/O   The percentage of total disk I/O operations in the last sampling interval performed by that controller or unit.

TIME   The time, in seconds, spent performing I/O operations on the specified controller or unit during the last sampling interval.

%TIME   The percentage of disk I/O time spent performing I/O on that controller or unit during the last sampling interval.

Note

If a user logs in or logs out during a sampling interval, incorrect or even negative meter values may result. Some caution must therefore be used in interpreting the per-user metering data. Processes may accumulate CPU time without actually being logged in. Such processes will be displayed in the USAGE output.

.

DOCUMENTATION CORRECTIONS

Software Installation: The Software Installer's Guide   (IDR5028)
erroneously states that disk packs may be loaded into disk drives
before power is turned on at the CPU. The correct sequence is:

- Turn the power to CPU.

- Load disk packs.

- Turn on disk drives.

This correction affects pages 2-1 to 2-2 and 3-1 to 3-2.

Configuration Example: The configuration example on page 2-6 of the
System Administrator's Guide (PDR3109) states that octal 40 for NPUSR
and NRUSR is "decimal 24". The decimal equivalent for octal 40 should
read "decimal 32" for both NPUSR and NRUSR (POLER #29282.)

Assigning 6250 Density Magtape Drives: Page 3-27 of the System
Administrator's Guide (PDR3109) incorrectly indicates that tape density
settings on a 6250 bpi machine are handled in a manner identical to
that of other machines. Drives handling 6250 bpi select tape density
in a different fashion.

Although these machines still have a density switch, the setting of the
switch has no effect on setting the density. To select tape density
(either 6250 bpi or 1600 bpi), add the option -6250BPI or -1600BPI to
your ASSIGN command.

The format for ASSIGN with this option is:

```
ASSIGN  ⎰ MTpdn  [-ALIAS MT1dn] ⎱  ⎰ -6250BPI ⎱
        ⎱ MTX      -ALIAS MT1dn ⎰  ⎱ -1600BPI ⎰
```

Thus, to respond to the request:

    ***** MAGTAPE REQUEST *****
    From KERMIT (22) : MT1 -TPID POWER -6250

the operator would type:

    ASSIGN MT1 -TPID POWER -6250BPI

(POLERS #31852, #35688).

CHAPTER 3

LANGUAGES

BASIC (INTERPRETIVE)

DOCUMENTATION CORRECTION

DATE$: The DATE$ function prints the date in the form YYMMDD. The date form was incorrectly given as MMDDYY on page 3-5a in the Interpretive BASIC Programmer's Guide, IDR1813 (POLER #29512).

BASIC/VM

DOCUMENTATION CORRECTIONS - FDR3058

The following corrections apply to the BASIC/VM Programmer's Guide (FDR3058).

FOR ...NEXT Example: On page 6-11, line 20 of the last example on the page should read:

    20 FOR G = 1 STEP 1 WHILE G<X

The "6" should be a "G" (POLER #28886).

INT Example: Page 10-1 incorrectly states that

    INT(.99989) = 1

when in fact the expression:

    INT(.99989) = 0

is correct (POLER #31142).

SINH Definition: On page 10-3, the definition of SINH(X) should read (POLER #28886):

    (EXP(X)-EXP(-X))/2

String Function Formats: On page 10-7, in Table 10-2, the commas that precede the option brackets in the INDEX, SUB, and VAL formats should appear inside the brackets. The formats should be:

    INDEX(X$,Y$[,Z$])

    SUB(X$,Y[,Z])

    VAL(X$[,Y])

(POLER #28886).

COMINP: The COMINP command accepts a filename as an argument. It does not accept a pathname, as incorrectly stated on page 13-2 of the BASIC/VM Programmer's Guide, FDR3058 (POLER #32465).

Additional Notes:

● Numeric expressions are allowed as arguments to the following
  BASIC/VM statements:

  ENTER   SPA
  FOR   STEP
  LIN   TAB

● Multiple array (matrix) variables are allowed in MATINPUT
  statements. For example:

  MATINPUT A,B

● The MATPRINT statement does not accept print functions like LIN
  and SPA.

DOCUMENTATION CORRECTIONS - COR3058-001

Installation Procedures: The information given under "Installation
Procedures" and under "Example" on page 6-17B of AIDUS Change Sheet
Package COR3058-001 (for the BASIC/VM Programmer's Guide, FDR3058) was
incorrect. The following information replaces these two sections:

Installation Procedures

Non-system library FORTRAN routines can be loaded by the System
Administrator with BASIC/VM. This may be achieved as follows:

    STEP 1: Include the   routine's   source   file   sub-UFD
             BASICVSRC>SOURCE

    STEP 2: Edit BASICVSRC>SOURCE>FININT.USER.FTN to include
             the routine name.

    STEP 3: Edit BASICVSRC>BASICV.BUILD.CPL to include loading
             of routine.

    STEP 4: Run BASICVSRC>BASIC.BUILD.CPL to load BASICV.

    STEP 5: Run BASICV>BASICV.INSTALL.COMI.

    STEP 6: Run BASICV>BASICV.SHARE.COMI.

If subroutines from the system library VAPPLB are to be
included, Step 1 is not necessary.

Example

A non-system library FORTRAN routine named 'XYZ' is to be
called by BASIC/VM programs. The following steps should be
taken:

1. Include source file as XYZ.FTN in BASICVSRC>SOURCE.

2. In BASICVSRC>SOURCE>FTNINT.USER.FTN, after statement
   'EXTERNAL SAMPLE', insert the statement 'EXTERNAL XYZ'.
   Also, after statement:

   ```
   IF (NAMEQ$(NAME,LEN,'SAMPLE',6)) FTNINT = LOC(SAMPLE)
   ```

   insert the statement:

   ```
   IF NAMEQ$(NAME,LEN,'XYZ',3)) FTNINT = LOC(XYZ)
   ```

   Note that the fourth argument in the function (3) is
   the length of the subroutine's name in bytes
   (characters).

3. In BASICVSRC>BASICV.BUILD.CPL, after line:

   ```
   FTN SAMPLE -64V -XREFS -SPO -DCLVAR -PBECB -LIST NO
   ```

   insert line:

   ```
   FTN XYZ.FTN -64V -XREFS -SPO -DCLVAR -PBECB -LIST  NO
   ```

   Note that XYZ.FTN is the name of source file used in
   step 1. Also, FORTRAN compile options can be varied.

4. Run BASICVSRC>BASICV.BUILD.CPL (from the supervisor
   terminal).

5. Run BASICV>BASICV.INSTALL.COMI (from the supervisor
   terminal).

6. Run BASICV>BASICV.SHARE.COMI (from the supervisor
   terminal).

COBOL

INCOMPATABILITY BETWEEN COBOL and MIDAS

The allocation of segment '2014 to the shared COBOL library and the shared MIDAS library has been changed because of the increase in size of the COBOL library at Rev. 18.3. The allocation of segment '2014 to these libraries is now the following:

```
C2014A    '100  to    '277    /* COBOL
K2014A    '300  to    '777    /* MIDAS
C2014B   '1000  to  '37777    /* COBOL
K2014B  '40000  to '177777    /* MIDAS
```

Warning

Because of this new configuration an 18.3 shared COBOL library will not work with a MIDAS library that is below 18.3. Rev. 18.3 COBOL should only be run with 18.3 MIDAS and up.

NEW FEATURE

Change in -XREF Display: The cross-reference listing produced by the -XREF option of the COBOL compiler now flags a first definition with the notation "DEF" instead of "D". For example:

Cross Reference of Programmer-defined Names

NAME	LINE NUMBER			
A000-CREATE-SALES-REPORT	161DEF			
A001-BUILD-DATE-FIELD	163	195DEF	251	311
A010-PRINT-HEADINGS	174	202DEF	224	
A020-PRINT-FINAL-TOTALS	184	215DEF		

This information replaces the information and example concerning -XREF on pages 2-6 and 2-7 in the COBOL Reference Guide (FDR3056).

GENERAL COBOL PROBLEMS FIXED

Called COBOL Programs: A called COBOL program with more than seventeen arguments in the USING clause of the PROCEDURE DIVISION no longer gives INTERNAL ERROR = TBL group (POLER #33223).

Program-ID: COBOL now names a file with the first four characters of the PROGRAM-ID if it has been re-opened for OUTPUT and written to with the ADVANCING option (POLERS #20014, #21675, #27321, #31699, #34328).

DELETE: The compiler no longer allows a DELETE statement on a sequential file and no longer generates a call to C$DS (which does not exist). DELETE on a sequential file is illegal. (POLERS #21651, #22550, #32278, #37385).

VALUE Clause: The compiler now recognizes the plural form of the VALUE clause ("VALUES"). It was being flagged as a syntax error (POLER #30267).

-XREF: The shared COBOL compiler no longer halts with an "ACCESS_VIOLATION$" when selecting the -XREF option. The non-shared COBOL compiler (NCOBOL), which processed the -XREF option, now no longer halts with a "POINTER_FAULT$" if the program exceeds 1500 lines (POLERS #25387, #29232, #30101, #32617, #33611, #82495).

ACCEPT: An INTERNAL ERROR 116 no longer occurs if an ACCEPT <data-name> FROM DATE statement is the first statement after a reference to a subscripted data-name (POLERS #28616, #37750).

ADD: ADD statements following a SUBTRACT CORRESPONDING statement are no longer flagged as errors (POLER #34308).

GROUP ITEM: A GROUP ITEM with size greater than 32K bytes and under 64K bytes no longer causes the compiler to abort with an erroneous error message (POLERS #24161, #35416, #82275).

Subscripted Variables: The compiler no longer terminates with "INTERNAL ERROR 106" in a CALL statement with a subscripted variable. A "D" level error is now produced for calls with subscripted variables (POLERS #29677, #29964, #32649, #40186).

Changes to START Verb: Two forms of the START verb gave unpredictable results. START without a relational argument or key now defaults to IS EQUAL TO and primary key. Also, START used on an OUTPUT file is flagged as an error.

ASSIGN: Certain execution errors will no longer reference files assigned (by ASSIGN) to PFMS as assigned to magnetic tape (POLER #46853).

PROBLEMS FIXED CONCERNING COBOL AND MIDAS

READ NEXT Locked Record Conflict: At Rev. 18.3, the original (pre-Rev. 18.2) method of resolving user conflicts over locked records on a READ NEXT operation has been restored. The READ NEXT operation now returns the correct record when it encounters a locked record.

The situation referred to here is the familiar one where user A has a file open for reading in I-O mode and attempts a READ NEXT operation on a record that is now locked by user B. At Rev. 18.2, when this situation occurred, user A would receive the "record locked" error code, which is a FILE-STATUS code of 90. MIDAS would then make the locked record current. This caused the subsequent READ NEXT operation to return the record following the locked record, because it was the next "logical" record. User A would never retrieve the record which user B had locked. Furthermore, user A's second READ NEXT operation would unlock the locked record, much to user B's surprise.

The Rev. 18.3 version of MIDAS will simply keep trying to read the locked record until it is released by user B (POLERS #35232, #31189, #35428, #35429).

READ and WRITE: A READ with the key found and a READ with the key not found, followed by a WRITE to an indexed MIDAS file no longer result in a MIDAS 33 ERROR (POLERS #29442, #33612, #34268).

REWRITE: Previous versions of COBOL allowed the REWRITE of a primary key in a MIDAS file, which eventually would cause indexes to be corrupted. An attempted REWRITE on a primary key now returns a FILE-STATUS code of 22 (POLERS #14164, #23993, #27712, #31610, #31857, #32001, #40091, #824559, #824569).

An attempt to perform a REWRITE on a MIDAS file record without first performing the required READ, no longer causes the program to abort but instead activates the INVALID KEY clause and returns a FILE-STATUS code of 91 (POLER #29484).

DOCUMENTATION CORRECTION

COBOL and User-Defined On-Units: Users writing in COBOL cannot define their own on-units. More details are listed under the "Condition Mechanism" section in Chapter 4 (UTILITIES).

DBG (SOURCE LEVEL DEBUGGER)

DOCUMENTATION ADDITION

Maximum Line Length: The following information should be added to page 3-1 of the Source Level Debugger Guide, IDR4033 (POLER #32627):

    The maximum length for a DBG command line is 256 characters.
    The maximum length for a single command (separated by
    semicolon) within a command line is 120 characters.

FORTRAN   (FTN)

NEW FEATURE

Additional Logical Units: Two   more   logical units were added to the IOCS system.   The units are 139 and 140   for   printer   units   0   and   1 respectively.   FORTRAN programs may reference these units.

PROBLEMS FIXED

Command Line Source File Name: The command line parser now handles blanks in the source file specifier.

Compile Time Faults: A simple subroutine that uses the   -DEBUG   option and that   uses   the   subroutine   name   no longer incorrectly causes the compiler to halt in the middle of its processing.

A short program in which a dimension statement   is   omitted   no   longer causes the compiler to loop endlessly.

DOCUMENTATION CLARIFICATIONS

The following   clarifications   apply   to   the   Fortran Reference Guide, FDR3057.

Double Precision Numbers: D format is mandatory in   specifying   double precision numbers.   Please   add   this information to the discussion of double precision numbers at the bottom of page 5-3 (POLER #40575).

FTN Intrinsic Functions: Some of the FTN intrinsic functions carry the default data type of their program modules (that is, "short" integers), rather than the data type of the context (receiving   variable)   that   a programmer would ordinarily expect.   These functions are:

- IDINT
- MAX1
- IFIX
- MIN1
- INT

If you want the values returned by these functions to be long integers, compile the program module with the   -INTL   option.   This   information should be added to Section 8 (POLER #37815).

Condition Mechanism: A   clarification   on   the   use   of   the condition mechanism by FORTRAN programs appears in Chapter 4 (UTILITIES) of   this document, under "Condition Mechanism."

OUTSTANDING PROBLEMS

Cross-Reference List: The   compiler-generated cross-reference listing omits all variables with $ as the second character (POLERS #37636 and #824502).

The cross-reference listing for certain intrinsic functions is garbled (POLER #82611).

The cross-reference listing can be confusing for equivalenced variables, because it indicates that the variables were specified on the line number of the last specification statement, rather than on the actual line number (POLER #27520).

$INS: $INS in lieu of $INSERT neither generates a compile error nor inserts a file into a program (POLER #30130).

Execution: The statement " UX=U(1,1)+(M-1,1)" compiled without .errors produces incorrect program results (POLER #81994).

Object Output: A program's object output has multiple indirect errors which are detected by SEG (POLER #36980).

Floating Point Comparison: Bad code is produced in a case of floating point comparison (64R mode) (POLER #33631).

Inaccurate Warning Message: The "parameter is better" warning message is occasionally not accurate (POLER #12484).

MIN1: In 64V-mode compilations, the MIN1 intrinsic function will not accept more than 4 arguments (POLER #34908).

Relational Operators: Relational operators comparing integers may produce code that uses the result of subtracting the two integers. The relational value is wrong if the subtraction causes overflow (POLERS #35339, #82303, #82614).

ENCODE: The modification of an array by an ENCODE statement is not reflected in the cross-reference listing or in the "never given a value" warning of -DEBUG mode (POLER #12490).

Format Specifier: In 64V mode, the compiler does not accept a variable as the format specifier in an I/O statement. An integer variable, which has been assigned the value of a FORMAT statement label in the current program unit, should be allowed (POLER #21112).

Continuation Lines: Continuation lines are sometimes a problem because the compiler must be able to recognize the type of each statement based on a single source line (POLER #27520).

FORTRAN 77

NEW FEATURES

<u>Improved Runtime Performance</u>:   Processing speed has been increased in two areas:

- DATA statements that initialize items with implied DO-loops.

- Array operations in I/O lists where the implied DO represents a contiguous area in storage.

<u>Improved Code Generation</u>:   Segment-spanning code is now generated when a small array is equivalenced to a large array in a common block that spans a segment boundary.

<u>Improved Diagnostics and Error Handling</u>:   The user will get an appropriate error message in the following cases:

- Concatenating anything but character scalars.

- Comparing an array to a character scalar.

<u>Restriction on Common Blocks</u>:   The following restrictions on common block usage are designed to prevent an item from being split over a segment boundary:

- Every variable must be offset by a multiple of its element length from the start of the common block.

- For character data, each variable or array element must also have a length that will divide evenly into the length of a segment (64K words).

<u>Restriction on Use of Octal Constants</u>:   Since the ANSI FORTRAN character substring operation and Prime's convention for octal constants both use the colon character, some expressions involving colons are ambiguous. Therefore, if a program unit with a CHARACTER or IMPLICIT CHARACTER statement wishes to use octal constants anywhere in an function argument list, that function must be specified in an INTRINSIC or EXTERNAL statement.

<u>Additional Logical Units</u>: Two more logical units were added to the IOCS system. The units are 139 and 140 for printer units 0 and 1 respectively. FORTRAN 77 programs may reference these units.

PROBLEMS FIXED

Comments: Comments of the form "/* text" near column 72 now work (POLERS #31490).

SQRT: SQRT intrinsic now handles COMPLEX*16 datatype (POLERS #29613).

-P Abbreviation: The command line abbreviation "-P" now selects -PRODUCTION (POLERS #34449).

$INSERT: Errors in $INSERTed files are now displayed along with that filename.

EQUIVALENCED Variables: EQUIVALENCED variables are now shown with the same location in the listing.

DEBUG Option: BLOCK IF statements now compile the correct code when the -DEBUG switch is selected.

PASCAL

NEW FEATURES

-MAP/-NO_MAP Compiler Option: The Pascal compiler has a new option:
-MAP/-NO_MAP. The -MAP option is the default and will not make any
user visible change.   The -NO_MAP option will generate a listing file
that includes only the program. The "map" that lists where all the
variables are in memory will not be printed.   Please add this
information to the discussion of compiler options in Section 2 of the
Pascal Reference Guide (IDR4303).

Integer: INTEGER is now allowed as an array subscript. The array must
be an external array. For example:

    VAR A : ARRAY[INTEGER] OF INTEGER;

Symbol Table Size: The Symbol Table size has been enlarged to at least
twice its previous size.

Comment Delimiters: /* */ have been added as comment delimiters.

Page Ejects: A {$P} has been added to generate page ejects in compile
time listings.

EOF Character: A CONTROL-C will now be interpreted as an EOF character
from the terminal.

INCLUDE Files: Pascal now gives separate line numbers for INCLUDE
files.

Record Length: The allowable record length for files of records has
been doubled to be 32K words.

-TTY File: A -TTY file has been added to allow resetting of a data
file to the terminal. The entry -TTY File for RESET and REWRITE below,
under Problems Fixed, contains more details.

PROBLEMS FIXED

READLN and EOF: READLN now works with EOF from the terminal. An EOF
character (a CTRL C) was added to signify EOF from the terminal,
(POLERS #28817, #37566).

-EXTERNAL: The -EXTERNAL option now works (POLER #29264).

RESETS: A pair of RESETS operating on the same file, and open on the
same file unit, no longer causes errors (POLER #29268).

INCLUDE Files: Pascal now puts out separate line numbers for each
INCLUDE file in the output listing (POLER #29278).

-RANGE: The -RANGE option now works (POLER #29419).

INTEGER: A feature was added that allows the use of "INTEGER" as an
array subscript. For example:

    VAR A : ARRAY[INTEGER] OF INTEGER

All arrays using this feature must be external (POLER #29462).

Multiple Writes: Multiple writes to the terminal of non-character data
no longer cause run-time errors (POLER #29481).

Temporary File Close: The closing of a temporary file now closes the
temporary file (POLER #29482).

Record Size: A program writing to a file of record, where the record
was greater than 16K words, no longer causes an error. The maximum
record size is now 32K words (POLER #29486).

Integer Conversion Warning: A warning is now flagged when a double
integer-to-integer conversion is done (POLER #31065).

Symbol Table Overflow: A sparse case statement used to cause symbol
table overflow. The symbol table has been approximately doubled in
size, and the enlargement should eliminate the problem. However, use
of sparse case statements should be avoided (POLER #31498).

Large programs can still cause a symbol table overflow. The increase
of the symbol table size should reduce this problem (POLER #36705).

Large Program Aborts: The compiler aborts on very large programs.
This is still the case. If your program is large and aborts,
modularize it and make some of the routines external. This
restructuring should solve the problem (POLER #32825).

CHR(x): CHR(x) where x is a long integer no longer causes incorrect
results (POLER #32834).

CHR(x) is now legal where 0<=x<=255, rather than for the range
128<=x<=255 (POLER #35848).

Upper Bound in FOR Loop: The Upper Bound on the FOR loop is no longer
evaluated every time the loop is executed. It is now evaluated once,
before the loop is entered. This means that when the upper bound is a
variable, changes to its value during the processing of the loop will
not affect the number of times the loop is executed (POLER #33809).

-TTY File for RESET and REWRITE: RESET (INPUT, 'data') causes the default INPUT file to be transferred to a data file. Now RESET (INPUT, '-TTY') will change the default input file back to the terminal. This also works for REWRITE (POLER #33880).

Resetting Binary File: Resetting a binary file no longer generates P$AFCK errors (POLER #33949).

Page Eject Option: A {$P} option has been added which generates a page eject in the compiled listing of a Pascal program (POLER #35318).

Using a File of Record: An internal error is no longer generated when you try to use a file of record (POLER #35323).

Resetting Temporary Binary File: A reset of a temporary binary file no longer causes errors (POLER #35825).

Assignment Statements and IF Statements: An assignment statement no longer fails to modify the target variable when it is used in a complex IF statement (POLER #35830).

DBG Errors from User Defined Types: Internal DBG errors are no longer generated when a program references a user-defined type (POLER #35831).

Pascal Procedures: Pascal procedures, loaded from a library where the force load flag is not set, now load properly (POLER #35841).

WRITELN: The length parameter for WRITELN now works (POLER #36713).

Code for Sets: S:=[0..255]-[160] now generates correct code for sets (POLER #36744).

IN Command: The Pascal IN command now works correctly for long integers (POLER #36746).

IN Operator: Pascal now generates an error message when the IN operator is used on a non-set type (POLER #36747).

Long Integer Array Elements: Long integer array elements now work correctly (POLER #37325).

Rounding and -FRN Option: Pascal rounds incorrectly when it prints the results of some arithmetic operations involving real numbers. Using the -FRN compile time option corrects this problem temporarily (POLER #37922).

Integer Followed by Character: Reading an integer followed by a character no longer loses the character.

Error Messages and Terminal Screen: Error messages have been modified to fit on a terminal screen.

"Non-Standard" Error Messages: The "non-standard" error message has been changed to a warning.

REWRITE: REWRITE (f, 'data');   REWRITE (g, 'data');   now causes a
runtime error instead of access violations.

DOCUMENTATION CORRECTIONS AND CLARIFICATIONS

The following corrections and clarifications apply to the Pascal
Reference Guide (IDR4303).

PACK and UNPACK: The discussion of the keyword PACKED   under
"Restrictions to the Proposed Standard" on page 1-4 contains the
sentence:

> The standard procedures PACK and UNPACK will also generate a
> warning, but the correct code will be generated.

This sentence should be replaced with the following:

> The standard procedures PACK and UNPACK will generate an error
> at compile time and will not generate correct code.

Pascal Subprograms: Please add the following to the "Note" at the
bottom of page 9-11:

> If VAR is used to describe external variables, it must precede
> {E+}. See Example 2 below.

Example 1 of Pascal subprograms at the top of page 9-12 begins:

> {$E+ Enable external compilation}
>
> PROCEDURE EXTERNAL;

Replace this information by:

> {$E+ Enable external compilation module}

OUTSTANDING PROBLEMS

Elementary Data Items and Segment Boundaries: Pascal does not inform
the user when an elementary data item crosses a segment boundary. This
is still the case. Please be warned of this problem when you write
programs with large data areas. Do not allow elementary data items to
cross a segment boundary (POLER #35840).

Other Pascal Problems: POLERS on outstanding Pascal problems are
listed in the on-line POLERS data base. See your system analyst.

PL1G

NEW FEATURES

-MAP/-NO_MAP: The compiler has a new option: -MAP/-NO_MAP. The -MAP option is the default state and will not make any user visible changes. The -NO_MAP option will turn off the variable reference map at the end of the listing (POLER #29979).

PROBLEMS FIXED

STRING: The STRING built-in function now accepts a character string argument (POLER #20763).

FLOAT: The FLOAT built-in function now works correctly and now accepts literal arguments (POLERS #32369, #29102).

-RANGE: The -RANGE option works correctly in 32I mode (POLER #29103).

Constants: Constant -(2**15) works correctly, but -(2**31) is not supported (POLER #28804).

Long Line I/O: PL1G now supports large line size I/O up to 2056 characters per line (POLER #34194).

'COL': 'COL' input format now works correctly (POLER #33429).

GET LIST: The GET LIST statement will now signal the EOF condition when reading an empty file (POLER #36271).

DO WHILE: An unconditional branch will be generated for a 'DO WHILE('1'b)' statement (POLER #27397).

Bit String Comparison: The comparison of bit strings is no longer dependent upon position (POLER #31518).

TRANSLATE: The TRANSLATE built-in function works with a shorter second argument (POLER #32361).

PUT LIST: The PUT LIST statement now handles two source lines correctly (POLER #32362).

Data Conversion: PL1G will convert fixed dec(7) data to character string correctly (POLER #32675).

Variable Definition: Variables defined on external structures or index now work correctly (POLER #37704).

A variable defined on itself now flags the correct error (POLER #43826).

FREE Requests: FREE requests in dynamic allocation now work correctly (POLER #90320).

Compiler Attaches: The PL1G compiler attaches to another UFD during a compilation. It could not reattach to a passworded directory after the compilation. It can now reattach.   (POLER #33382).

DCL: A DCL with a built-in function now works correctly (POLER #32369).

Large Decimal Values: The first digit of a value greater than dec(14) used to be dropped.   This resulted because the largest decimal digit that can be printed is f(14,*). In this situation a size error will now occur, and the value will not be printed (POLER #32366).

Picture Clause: Picture clauses with 9's now print correctly.

Short Call Procedure: A short call procedure with a return in it now generates the correct code.

Short Bit Strings: Unaligned short bit strings across word boundaries now work correctly.

Large Stack Frames: Large stack frames now work correctly.

POINTER: The statement POINTER INIT(NULL( )) now runs correctly.

MIDAS Files and PL1G: Reading a MIDAS file after it was created using the PL1G interface allowed only one record to be read.   The PL1G library has been modified to correct this problem. Now all created records can be read (POLERS #43838, #40992).

DOCUMENTATION CORRECTIONS AND CLARIFICATIONS

The following corrections and clarifications apply to the PL/I Subset G Reference Guide (IDR4031).

PICTURE Attribute: A pictured value of all 9's cannot contain blank characters. It can contain only numeric digits (POLER #30109). Please add this information to the discussion of Pictured Data, pages 3-4 to 3-7.

Device Files: A device file may be opened with either of the following:

     OPEN FILE(name) TITLE('device-name -DEVICE')
     OPEN FILE(name) TITLE('@device-name')

However, the qualifier -DEVICE and the @ sign should not be used with SYSPRINT and SYSIN. This information should be added to the discussion of -DEVICE on page 11-4, following the sentence: "Only nonkeyed files

can be read or written to devices," (POLER #34300).

On page 11-5, the first item in the bullet list reads:

    If the name is a device name, -DEVICE is used.

This sentence should read:

    If the name is SYSIN or SYSPRINT, -DEVICE is used automatically, by
    default.

(POLER #34300).

OUTSTANDING PROBLEMS

DEFINED: The PL1G compiler does not process correctly a variable
'DEFINED' on a built-in function (POLER #33319).

Other PL1G Problems: POLERS on other outstanding PL1G problems are
listed in the on-line POLERS data base. See your system analyst.

<u>PMA</u>

NEW FEATURE

<u>P850 Support</u>:   The following mnemonic Opcodes are now implemented for
<u>P850 support</u>:

    ENBL, ENBM, and ENBP
    INHL, INHM, and INHP

FEATURE REMOVED

<u>P300 Support</u>: The FRAC instruction has been removed from PMA at Rev.
<u>18.3.</u> The instruction only existed on the P300 with special hardware
and was never implemented on the P400, P500, or the 50 Series. Support
for the P300 was dropped at Rev. 16.0.

PROBLEM FIXED

<u>Directory Passwords</u>: PMA will now correctly handle source filenames
<u>with passwords</u> in the directory portion of the pathname.

DOCUMENTATION CORRECTIONS

The following corrections apply to the <u>Assembly Language Programmer's</u>
<u>Guide</u> (FDR3059).

<u>MRNR and MRGR</u>: One page 9-17 the descriptions of the MRNR and MRGR
instruction formats were mistakenly interchanged (POLER #34788).

<u>Two Word Memory Reference</u>:   Under TWO WORD MEMORY REFERENCE on page
<u>10-8 the</u> description for the bits following OP should read:

    Bits   7-11   11000

<u>64R Summary</u>: On page 10-21, in the table at the bottom of the page,
<u>the entry</u> for "1 1 1 0 — '100 to '777" should have a comma
inserted into the assembler notation, to read:

    LDA ADDR,*1

<u>Computed GOTO</u>: On page 12-3, the Computed GOTO (CGT) instruction is
<u>shown</u> incorrectly. The line introducing CGT should read (POLER
#34758):

   ▶ CGT R Computed GOTO

Add Link to Register Instruction: On page 12-10 the function of the Add Link to Register (ALTR) instruction should read (POLER #35704):

    if key (L)= 1 then R+1->R

Divide Halfword: On page 12-10 the function of the Divide Halfword instruction should read (POLER #34788):

    R/[EA]16->RH; Remainder->RL

Increment Half Register by 1: On page 12-11 the format for the Increment Half Register by 1 (IH1) instruction is shown incorrectly. The line introducing IH1 should read:

▶ IH1 R   Increment Half Register by 1

Macro Calls: The arguments for Macro calls are limited to 31 characters. Add this information to the bottom of page 17-2, following the statement outline under MACRO CALLS (POLER #36424).

ASCII Character Set: Page B-3 indicates incorrectly that the character K has an octal value of 312. The octal value of K should read 313.

RPG

PROBLEMS FIXED

Positive Overpunch: RPG now recognizes positive overpunch (A through I, {) in input files (POLERS #25770, #33608).

DIV: DIV with half-adjust now yields the correct result precision (POLERS #28993, #30636, #36839).

Packed Control Fields: Packed control fields now work (POLER #30148).

Output Records: Output records with no output fields now do not cause a RESTRICTED INST$ condition (POLER #33259).

CHAIN: An unsuccessful CHAIN no longer fills a record with 9's (POLER #34309).

Update Files: Update files read sequentially now always refer to the correct record (POLER #37619).

SETLL: An unsuccessful SETLL no longer fills a record with 9's (POLER #37620).

VFTNLIB

NEW FEATURES

BINARY FORTRAN 77 I/O: BINARY FORTRAN 77 I/O now works 20% - 40% faster.

NAMELIST: NAMELIST support for FORTRAN 77 has been unshared, since we needed the room in the shared library. NAMELIST was thought to be little used.

IOCS System: Two more logical units were added to the IOCS system for use by PL1G. The units are 139 and 140 for printer units 0 and 1 respectively. FORTRAN and FORTRAN 77 programs may reference these units as well.

PROBLEMS FIXED

NAMEQ$: NAMEQ$ now has a test for lower case "a".

CABS: CABS no longer overflows if arguments are within legal bounds.

F$IO77: F$IO77 now accepts B-format statements with a trailing and leading blank.

F$IOFIN: F$IOFIN operates properly on multiple, internal sequential commas.

VPSD (VIRTUAL SYMBOLIC DEBUGGER)

FRAC REMOVAL

The FRAC instruction, which is obsolete at Rev. 18.3, has been removed from VPSD tables.

PROBLEM FIXED

STEX: The STEX instruction is now recognized properly.

CHAPTER 4

PRIMOS AND UTILITIES

PRIMOS

NEW FEATURES

HELP: A HELP command has been added. HELP is discussed in full later in this chapter.

Parallel Interface Support: Support for the general purpose parallel interface controller (T$GPPI) has been added.

USAGE: The USAGE utility has been enhanced. USAGE is discussed in Chapter 2 (SYSTEM ADMINISTRATOR).

PROBLEMS FIXED

ADDISK: If the wrong FAM format was used in the ADDISK command, the error message returned was "bad parameter". This command has now been changed to give an indication of the correct FAM to use.

If User One has an active command output file and does an ADDISK -RENAME that fails, the system no longer halts.

AMLBUF: AMLBUF can no longer change the sizes of the remote login terminal I/O buffers.

AMLC: AMLC command no longer overlays remote login buffers (TAR #33062).

Two extra arguments were left off the SVC handler for T$AMLC. They are now correctly passed. (TAR #44399).

A system running with two or more of the old AMLC boards (that is, the 5054 DMQ boards) halted at location 6/121007, in AMINIT.PMA, when the system was cold started. This has been fixed.

ASSIGN/UNASSIGN: Severity error code is now passed back when an error occurs in an attempt to assign a magnetic tape drive.

ASSIGN logic has been modified so that an attempt to assign a magnetic tape drive with the command ASSIGN M will not be successful if SETMOD -NOASSIGN has been issued at the supervisor terminal. Otherwise, MT0 is assigned. (TAR #29261).

Error code E$NASS ("Not assigned"), rather than error code E$DIVU ("Device in use") is now returned if a user attempts to unassign an AMLC line that he does not have assigned.

A problem existed in which a user who had an active COMOUTPUT file and who attempted to assign a non-existent Megatek device (by mistyping MT as MG) would crash the system. This problem has been corrected.

ATTACH: Remote ATTACH scan no longer aborts on a bad MFD.

Attaching to a sub-UFD can now be done without setting the home directory.

Cards: Incompatibilities that caused machine checks during attempts to read cards have now been removed.

Command Functions: DIR and PATHNAME now handle MFD-level objects correctly.

PATHNAME now handles quoted arguments correctly.

CNAME: The CNAME command incorrectly printed the old name in the error message when the new name was illegal. It now prints the new (illegal) name.

CPL: Several problems have been corrected in Prime's Command Procedure Language. These are listed under Problems Fixed in the CPL section of this chapter.

CREATE: When CREATE was called with more than one argument, all arguments after the first were ignored. The command now gives an error message in this situation.

CRMPC: Changes have been made to CRMPC to correct error handling. Previous versions would print error messages on the user's console when a card was incorrectly read. However, the card reader would not stop. In addition, the incorrectly read data would be put into the user file. With the new version of CRMPC, any error will cause the card reader to stop. The card that was being read when the error occurred is ignored, and CRMPC returns to command level. At this point, the user can replace the card and continue the operation by typing 'START'. (TAR #20729).

An additional problem with CRMPC concerned the treatment of card reader offline status. If, while reading cards, a user hit the stop button on the card reader to stop cards from being read and then pressed the reset button to continue reading, a meaningless character would be put into the user's file. This problem has now been corrected.

DBG: Supervisor terminal no longer has to attach to CMDNC0 for DBG to work.

DISK: Typing DISK NOT command at the supervisor terminal while COMOUTPUT is on no longer crashes system (TAR #27063).

Floppy Drives: The problem of floppy drives being slow has been corrected (TAR #36821).

A problem existed with the floppy disk driver that crashed the system if a timeout occurred. This problem has been fixed.

Internals: The initialization flags for shared library linkage are now kept in the command processor stack and initialized by the command processor. This corrects failures that occurred when on-units invoked library subroutines.

SEM$OU has been added as a gate.

CLDATA has been moved away from static mode library init bits, which are now always word 4 of the ring 3 stack (6002).

A command environment problem causing nonlocal GOTO from a CPL on-unit to a "START address" command to thread the stack incorrectly and cause a FATAL$ error has been fixed (TAR #41507).

A bad declaration in GT$PAR.INS.PLP has been corrected.

Ring 0 stacks can now be unwired when users are logged out.

I/O: Output buffer now empties upon logout if DRPDTR CONFIG directive is set.

The check for buffer overflow now checks user 1's MSG buffer instead of the output buffer. This provides a more consistent check (TAR #29087).

XOFF's are now recognized when the buffer is full (POLERS #32163, #42687).

If XON/XOFF is disabled while printer output is suspended, output will now continue when printing is resumed.

Force write to an n reader/n writer file now happens properly. This write was not done previously.

XON can now be recognized when error checking is enabled (BUG #520, TAR #32163).

LISTF: The incorrect character which occasionally appeared at the end of the treename in the LISTF header line has been removed.

LOGIN/LOGOUT: The supervisor terminal no longer has to be attached to CMDNC0 for LOGIN to work.

Timeout while logging out no longer crashes the system.

MESSAGE: Deferred messages are now rejected for users in -REJECT mode (TARS #29686, #29688).

Networks: Two problems were fixed in the NPX signal mechanism: (1) The condition name was not passed to the master when an error occurred. (2) The slave went into a loop, taking up CPU time, because of recursive signal conditions.

X.29 parameter 14 (linefeed padding) is now supported.

The value of X.29 parameter 3 (data forwarding signal) was corrected from 86 to 126.

A problem in which the networks went down and then rapidly came up again (with users logged out or disconnected) has been fixed.

Queues are now checked to be sure they are long enough to hold the maximum number of entries put on them.

P850: Problem which left stream #2 (ISU-2) with bad parity on location 1000/1001 during startup has been fixed (TAR #44397).

Phantoms: A call to PHANT$ with a large length argument no longer crashes the system (TAR #41441).

Phantoms can no longer alter async lines data base via a DUPLX$ call.

PRWF$$: The problem in which a remote call to PRWF$$ with the post-position key sometimes gave the wrong record and always gave the wrong position, has been fixed.

Semaphores: The STATUS SEMAPHORE command now works correctly.

A correct version of LIOCOM.INS.PLP has been installed.

Processes no longer hang on the named semaphore mutual exclusion lock SEMSEM.

SETIME: The SETIME command will no longer accept illegal times (TAR #30221).

STATUS: The AMLC line number field in the STATUS output has been increased to 3 characters to support the increase to 128 lines.

Telecommunications: An embedded sync problem has been fixed.

The PA1-PA3 update of VBE has been fixed.

DE handling for TSF has been fixed.

A bad DIM data problem has been fixed.

Logout cleanup for BSCMAN has been added.

A BSCMAN problem regarding ENQs has been fixed.

DOCUMENTATION CORRECTION

Comment Lines: Page 2-91 of the PRIMOS Commands Reference Guide
(FDR3108), states incorrectly that the following two forms of PRIMOS
comment lines are valid:

```
/* [Any-text-desired]
 * [Any-text-desired]
```

The only valid form for comment lines is:

```
/* [Any-text-desired]
```

(POLER #44393).

Note

A line beginning with a * signifies a null command, that is, a
real command that does nothing. However, even though no action
is taken, the line itself is still evaluated by the command
processor (for example, for abbreviation expansion). Thus, it
is possible for these lines to produce error messages that will
halt a program even though the lines were not intended to
execute. For example, a command line reading

```
* [
```

would cause an error when the command processor tried to
evaluate the apparent function call.

OUTSTANDING PROBLEM

MESSAGE: The MESSAGE command with -FORCE does not override a user's
reject state.

<u>BATCH</u>

PROBLEM FIXED

JOB -CHANGE has been fixed at Rev. 18.3. A line of source code inadvertantly deleted, probably at Rev. 18.1, has now been reinstalled. Until this fix, JOB -CHANGE on an existing (changeable) job would fail with a "Unit not open" or "End of file" error.

DOCUMENTATION CLARIFICATION

<u>Submitting Jobs from Passworded Directions</u>: Add the following note to the "Note" at the bottom of page 10-2 in the <u>Prime User's Guide</u> (PDR4130):

> If a job is submitted from a passworded directory (including your own), the -HOME option, explained in the list, <u>must</u> be used. The password must be included in the pathname, and the pathname must be enclosed in quotation marks. For example:
>
> JOB filename -HOME 'dir-name password'

(POLER #35946).

CONDITION MECHANISM

DOCUMENTATION CORRECTIONS

FORTRAN: FORTRAN (FTN) programs using the condition mechanism must be compiled with the -SPO option.

An example of a FORTRAN program that uses the mechanism appears in Section 16 ("Using the Condition Mechanism") of the Prime User's Guide (PDR4130).

This information should be added to page 23-3 of PRIMOS Subroutines Reference Guide (PDR3621), after the conversion table for PL/I and FORTRAN datatypes (POLER #30176).

COBOL and User-defined On-units: Users writing in COBOL cannot define their own on-units.   Please delete the word "COBOL" from the list of languages allowing user-defined on-units. This list appears on page 16-2, in the first sentence of paragraph two of the Prime User's Guide, PDR4130 (POLER #30176).

CPL

NEW FEATURES

Two changes to CPL enhance the ability to enter data or commands within &DATA groups:

&TTY_CONTINUE Directive: A new directive, &TTY_CONTINUE, has been added. If a CPL program containing this directive is invoked interactively, then &TTY_CONTINUE behaves just like &TTY. However, if the CPL program is invoked from a COMINPUT file, or from a &DATA group in another CPL program, then execution of the &TTY_CONTINUE directive causes the &DATA group to get input from the COMINPUT file (or &DATA group), rather than from the terminal.

The syntax and usage of &TTY_CONTINUE are the same as those of &TTY.

&TTY and &TTY_CONTINUE may not be used within the same &DATA group.

If a &DATA group that executes a &TTY_CONTINUE statement is part of a loop, then each iteration of the loop reads a successive portion of the COMINPUT file (or of the &DATA group in the calling program). If no COMINPUT file is active, each iteration of the loop returns to the terminal for further input.

Freedom of Placement for &TTY and &TTY_CONTINUE: It is no longer necessary for the &TTY directive to be physically the last directive in the &DATA group. This allows for constructions such as:

    &IF condition &THEN &TTY
    &ELSE do_some_commands

In this example the &TTY directive executes only if "condition" is true.

No matter where &TTY or &TTY_CONTINUE are placed within a &DATA group, their execution follows the same pattern:

    1. The CPL interpreter reads and interprets all directives inside the &DATA group, and builds a temporary file of input to be given to the subsystem.

    2. The subsystem or program to be invoked by the &DATA group is invoked, and the input in the temporary file is provided to it. If this input is sufficient to cause an exit from the subsystem or program, no further processing is done by the &DATA block. Control simply returns to the next statement in the CPL program. This is true whether or not the &DATA group contained a &TTY or &TTY_CONTINUE directive.

3. If the input in the temporary file is exhausted without causing
    an exit from the subsystem or program invoked by the &DATA
    group, then the CPL interpreter checks to see whether a &TTY or
    &TTY_CONTINUE directive was executed in that &DATA group. If
    not, the CPL interpreter prints an error message and halts
    execution of the CPL program.

    If a &TTY directive was executed, input is then taken from the
    terminal until the subsystem terminates.

    If a &TTY_CONTINUE directive was executed, input is taken
    according to the following table:

CPL Program Invoked From	&TTY_CONTINUE Input Read From
terminal	terminal
COMINPUT file	that COMINPUT file
&DATA group in another CPL program	that &DATA group

Error Messages: The following error messages have been added:

58   The &TTY_CONTINUE directive may be used only inside a &DATA
block.

59   The &TTY directive and the &TTY_CONTINUE directive are
mutually exclusive. Only one or the other may be executed inside a
&DATA block.

1019   This &ARGS directive contains a global variable name (a name
starting with "."). Only local variable names may appear in an
&ARGS directive.

1020   This &ARGS directive contains an illegal variable name.

1021   The &ARGS directive does not accept numeric option
arguments. Option arguments must contain at least one alphabetic
character.

In addition, error message 36 has been changed. It now reads:

36   The &TTY directive may be used only inside a &DATA block.

PROBLEMS FIXED

&DO Groups: Error handling in &DO groups has been corrected. Errors
in &DO groups now report correct line number and text.

GOTO: A nonlocal GOTO out of a CPL condition handler, invoked while in a CPL routine, could not always find the target label of the GOTO. This problem has been fixed.

Expression Evaluation: CPL expression evaluation now correctly handles cases where variable 1 ends in ' and variable 2 is the true null string.

&SEVERITY &WARNING: &SEVERITY &WARNING now recognizes values less than -1 (TAR #45172).

DEFINE_GVAR: DEFINE_GVAR -CREATE now requires the full pathname for a passworded UFD (TAR #45376).

&DATA: &DATA now works with null &THEN and &ELSE clauses (TAR #45172).

&ARGS: &ARGS directive now generates an error message when it contains a global variable name.

Comments: Comment evaluation has been fixed to ignore special characters in comments.

DOCUMENTATION CORRECTIONS

The following is a compilation of error corrections and addenda to the CPL User's Guide (IDR4302). These corrections apply to Revs. 18.1, 18.2, and 18.3. The changes are listed section by section.

Section 4:

page 4-3, paragraph 1. Global variables.

   Global variables may NOT be defined by an &ARGS statement. They may be defined only by the SET_VAR command, the &SET_VAR directive, or the GV$SET subroutine.

page 4-3, paragraph 2. DEFINE_GVAR command.

   The following note should be added:

   If a global variable file resides in a passworded directory, a full pathname must be given in the DEFINE_GVAR and DEFINE_GVAR -CREATE commands. For example:

       DEFINE_GVAR '<DISK1>MY_DIR PW>VARFILE'

page 4-4. Example.

   The second line of the example should read:

   &SET_VAR .ERR_REPORT :=

page 4-5. DELETE_VAR command.

The book incorrectly states that wildcards can be used with the
DELETE_VAR command. Wildcards cannot be used with this command.

page 4-9. Note.

The note applies to ALL logical operators: >, >=, =, <=, and <.

Section 6:

page 6-4. First example on page.

The example should show a local variable, not a global variable.
Global variables are illegal in &ARGS directives.

Section 7:

page 7-1. Introductory bullet list.

The text should make explicit the fact that wildcards apply to ALL
file system objects — files, directories, and segment
directories.

page 7-8. Example.

The sample program contains two errors. Lines 11 and 12 should
read:

&THEN &SET_VAR COMPILER := [RESPONSE 'Please specify compiler']
/* compile the program
%COMPILER% %FILENAME% -64V -B %SOURCE%.BIN

page 7-10. The next to last example should read:

The wildcard name @@L matches all names that end with L:

        FOO.COBOL   BARR1.COBOL   BARR2.COBOL
        CLR.CPL   EDD.CPL   SCROLL

Section 11:

page 11-6. The &EXPAND Directive.

The correct forms for the &EXPAND directive are &EXPAND ON and
&EXPAND OFF.

page 11-7. The next-to-last paragraph should read:

> If abbreviation processing has been enabled by the &EXPAND ON
> directive, the command line is passed to the abbreviation
> preprocessor for evaluation before variables and functions are
> evaluated.

Section 12:

page 12-8. Last paragraph. ATTRIB function.

> The ATTRIB function returns "UFD", not "DIR".

Section 13:

The following <u>Caution</u> should be added to Section 13:

<div align="center">Caution</div>

> At Rev. 18, if a CPL is run from CMDNC0 as an external
> command, it interprets all numeric positional arguments as
> octal. This holds true no matter what the type declaration is
> for the argument. To provide decimal integers, you must use
> control arguments. Hence, you can pass an argument 5 to such a
> program by saying:

> RUNNIT 5

> However, to pass the decimal number 9 you would have to say
> something like:

> RUNNIT -LINES 9

Section 15:

page 15-2. The &SEVERITY Directive.

> The text implies that the &SEVERITY directive can be given a null
> <u>level</u> argument and a non-null <u>action</u> argument. This is not the
> case. If <u>level</u> is null, <u>action</u> must also be null.

Appendix A:

page A-3. Correct syntax for the &EXPAND directive is:

&EXPAND   { ON }
            { OFF }

page A-5. Correct syntax for the &SEVERITY directive is:

$$\text{\&SEVERITY} \quad \left[\begin{Bmatrix} \text{\&ERROR} \\ \text{\&WARNING} \end{Bmatrix} \begin{Bmatrix} \text{\&FAIL} \\ \text{\&IGNORE} \\ \text{\&ROUTINE label} \end{Bmatrix} \right]$$

Appendix D:

The following note should be added to the end of Appendix D:

Note

If a pathname begins with a quotation mark, COMINPUT programs
assume the closing quotation mark. If the programmer omits the
closing quote, the program will supply it. CPL programs do not
assume a closing quotation mark and do not supply it if the
programmer has omitted it by mistake. If a pathname fails when a
COMINPUT program is converted to a CPL program, this is probably
the cause.

OUTSTANDING PROBLEM

CPL and CMDNC0: CPL programs run from CMDNC0 do not accept non-octal
numeric parameters.

CRMPC

PROBLEM FIXED

Error Recovery for Card Readers: CRMPC now provides error recovery for
card readers. The major problem was that although error messages were
displayed on a user's terminal indicating the nature of problems, the
program continued to read cards. Thus no error recovery was possible,
and the user was forced to read in the entire card deck again.

CRMPC and the corresponding PRIMOS driver now stop reading cards when
they encounter any unusual conditions. The program continues to
display the appropriate error message, but a user may now correct the
error and start the program from PRIMOS command level to continue
reading the remaining cards (TAR #20729).

FUTIL

PROBLEM FIXED

TO, FROM, and ATTACH Subcommands: The TO, FROM, and ATTACH subcommands in FUTIL now scan for disk volumes by name correctly. They will now detect both storage module and other disks, and yet will not erroneously use the first disk that has a UFD with the same name as the volume name specified.

DOCUMENTATION CORRECTION

PASSWDS Abbreviation: The abbreviation for the PASSWDS option is incorrectly listed as P for the LISTF, LISTSAVE, and SCAN subcommands of FUTIL in the PRIMOS Commands Reference Guide (FDR3108, Rev. 18), pages 4-8 and 4-10. The correct abbreviation for PASSWDS is PA (POLER #31439).

REV. 0   4 - 20

HELP

The HELP facility is an online data bank new at Rev. 18.3.

PRIMOS itself now maintains information on individual PRIMOS commands,
on groups of commands, and on general topics.   You may obtain this
information directly from the terminal with the HELP command. Its
format is:

    HELP [name]

name is the name of the command or topic on which you wish information.
name may be a command abbreviation. If name is omitted, or if no
information is on file for name, a list of available commands and
topics is printed with a descriptive phrase for each.

The format of command description is:

    COMMAND_NAME   Brief description

        [Abbreviation—if any]

            Command line syntax

    Text describing the command and any options follows.   At the
    end of the listing are any references to further information
    and the date the HELP information was created or updated.

For example:

OK, HELP LOGIN
LOGIN   Gain access to system

        LOGIN ufdname [password] [ldisk] [-ON nodename]

    Users give the LOGIN command to gain access to the system.

    "ufdname" must be a valid UFD name on any of the disks
    available to the system.   "password" is an option that
    specifies the owner password. "ldisk" specifies logical device
    numbers to be searched for "ufdname" If the UFD has an owner
    password, you must supply it at LOGIN time.

    For more information on LOGIN, see The Prime User's Guide or
    The PRIMOS Commands Reference Guide.

    August 1981

OK,

MAGNET

MAGNET has been completely rewritten. The new version incorporates
many features that were lacking in older versions. Some of these new
features include Batch support, user-definable translation tables, and
variable-length records.   The following description highlights some of
these new features. Complete information is available in the Magnetic
Tape User's Guide (DOC5027-183).

Note

This new MAGNET is a qualified release product and is not part
of the Rev. 18.3 master disk. The master disk contains the old
MAGNET. Users who wish to have the new MAGNET should ask their
system analysts for it.

MAGNET COMMAND LINE

The new MAGNET command line recognizes three options.   -SILENT turns
off the printing of severity 1 messages within MAGNET. -USER causes
all mount and dismount messages to be sent to the user's terminal.
-OPERATOR or   -OPR causes mount and dismount messages to be sent to the
operator's console. -OPERATOR (-OPR) should be used when running a
MAGNET job under Batch.   The default command line is -OPERATOR (that
is, -SILENT is NOT the default.)

MAGNET SUBCOMMANDS

All old MAGNET subcommands (READ, WRITE, COPY, and QUIT) and their
dialogues are still supported by the new MAGNET.   However, these
subcommands now work in a non-interactive way to facilitate Batch
operations, and, in addition, are joined by the new commands DECLARE,
MODIFY, SAVE, MOVE, DELETE, DISPLAY, RENAME, and TRANSLATE.

Compatibility has been maintained between older versions of MAGNET and
this new version but there are some differences:

● The default for tape mount/dismount messages is the supervisor
  terminal, not the user's terminal as was the case in prior
  versions.

● After an I/O operation is complete (POSITION, COPY, READ, WRITE
  or MOVE) control returns to the MAGNET subcommand level and NOT
  to PRIMOS as was the case in older versions. The user MUST type
  QUIT to leave MAGNET.

INSTALLATION

New MAGNET is too large to be run as a single 1-segment program.
Therefore, the SEG file is now installed in the directory SEGRUN* and
an R-mode interlude, MAGNET, is placed into CMDNC0.

ANSI COMPATIBILITY/INDUSTRY-STANDARD ASCII

The old version of MAGNET was not ANSI compatible. When a file being
written to tape required more than one reel, no file marker was written
at EOT on the first reel. This problem is fixed in the new version.
However, tapes written by the old version of MAGNET may not be read
correctly by the new MAGNET (and vice-versa).

Up to this time, all tapes were written by MAGNET using our own version
of ASCII with the high-order bit of every byte set. The new version of
MAGNET defaults to industry-compatible ASCII except when the old forms
of the READ or WRITE command are being used. (Industry-compatible
ASCII is the default for the new forms of the READ and WRITE commands.)

VARIABLE-LENGTH RECORDS

ANSI, IBM and Prime variable-length records are now supported. These
record formats are specified by the FORMAT= option on the DECLARE or
MODIFY subcommand line.

PRIMOS GLOBAL VARIABLE LINKAGE

It is now possible to save and restore long descriptions of a tape's
logical and physical characteristics. These attributes may be stored
in PRIMOS global variables. Note that a global variable file must be
activated prior to invoking MAGNET in order to use these features.

DEVICE-INDEPENDENCE FACILITIES

Because of the built-in device independence of MAGNET, it is possible
to copy from tape to disk, disk to tape, tape to tape and disk to disk.
However, copying between two or more disk files is not optimized within
MAGNET, as it is within other subsystems (such as FUTIL). It is
better, therefore, not to use disk-to-disk copying within MAGNET.

TAPE LABELS

The code to read, write, and verify magnetic tape labels is contained
within MAGNET. However, this facility has <u>not</u> yet been fully tested,
and the labels facilities should therefore <u>not</u> be used. If you specify
LABELS= on the DECLARE or MODIFY subcommand line, a warning is
displayed on your terminal.

MAGSAV/MAGRST

PROBLEMS FIXED

Truncation: Truncation (or the lack of it in some cases) was
corrupting data files with both MAGSAV and MAGRST. This problem was
fixed by changing the parameters to the PRWF$$ calls (POLER #28883).

Saving Named Elements: When MAGSAV was saving a named element, the
save would not stop when it should have stopped if a file or UFD were
added at the same level. This problem has been corrected (POLER
#31022).

RWLOCK: When MAGRST restores a segment directory with no subfiles and
a non-default rwlock, the rwlock is now set properly.

Next Tape Out of Sequence: MAGRST now recovers and continues normally
when the wrong tape is loaded in a multi-reel restore (POLER #37450).

Disk Full: MAGSAV and MAGRST are no longer stopped by the disk full
condition when they are writing an index file to disk. They now allow
the user to delete files and continue with the save or restore (TAR
#16026).

No Levels Message: The no levels message for MAGSAV was incorrect and
has been fixed.

Incorrect Password with a $A Command: If ATCH$$ received an incorrect
password, it quit to command level. At this point no end of logical
tape was written and the user had difficulty in retrieving his
information. MAGSAV now writes an EOLT before performing a $A command
and undoes this if the attach is successful. This means that if a user
uses a bad password, he will be able to restore the files he has
already saved on the tape. The user can then continue his save from
the aborted attach point on a new logical tape in two ways. He may
invoke MAGSAV again once attached to the required UFD, or he may use
the $A command correctly.

MAKE

NEW FEATURE

160MB and 600MB Drive Support: MAKE at Rev. 18.3 has been modified to support the new 160MB and 600MB fixed media drives. Because these drives have maximum cylinder values other than 821, certain restrictions have been imposed on the use of these drives. (The 160MB drive physically has 823 cylinders. However, the last two cylinders are reserved for diagnostic purposes.) The following restrictions apply:

- These disks must be copied only to a disk of similar type (160 to 160, 600 to 600). This eliminates the possibility of lost data and preserves the diagnostic tracks.

- Because of the current structure of the PDEV, the last partition on a 600 partition must be 10 heads.

PROBLEM FIXED

Packnames: MAKE allowed lowercase packnames, thus rendering the dskrat name unreadable by the file system. MAKE has been fixed to convert the packname to uppercase (POLER #29712).

PHYSAV/PHYRST

NEW FEATURES

-TTY: The -TTY parameter has been added to the command lines for PHYSAV and PHYRST. If this parameter is specified, the magnetic tape unit number is taken from the user terminal (even if the current input stream is a command input file).

Logical Tape Number 0: Logical tape number 0 (zero) is now legal. It is taken to mean the current (or next) logical tape number.

PROBLEMS FIXED

REN: PHYSAV now correctly handles REN after the user has responded to the question: WRITE NEXT LOG. TAPE (YES/NO)? (POLER #32189).

Writing Logical Tapes: PHYSAV can now write more than one logical tape when used with an Integrated Formatter.

SEG

PROBLEMS FIXED

SEG and VLOAD: SEG now reports an error if the user loads a SEG file
in the VLOAD subprocessor (POLER #36524).

Deleting Corrupted SEG Files: SEG now deletes SEG files that were
previously corrupted for various reasons (for example, if the user hit
CONTROL-P in the middle of a linking session).

Warning Message with Segment '4035: If a user tries to use segment
'4035, which SEG uses internally for its own symbol table, a warning
message appears and control returns to SEG subcommand level. A warning
error code is returned at the end of the session. This procedure is an
improvement over Rev. 18.2 SEG, which would always abort to PRIMOS
under this circumstance, even if uninitialized data was the only code
loaded into segment '4035.

DOCUMENTATION CLARIFICATIONS AND CORRECTIONS

The following information should be added to the LOAD and SEG Reference
Guide (PDR3524).

Segments Below '4000: Although SEG restores the user's runfile into
memory before executing the runfile, SEG will not restore segments
numbered below '4000. This restriction protects the user from
destroying other programs.   Segments below '4000 may be restored only
by the operator using the SHARE command (explained in System
Administrator's Guide, PDR3109). Please add this information to
Section 7 (POLER #40588).

P/ Subcommand: The description of the default segments for the P/
subcommand of SEG's LOAD subprocessor is incorrect. On page 4-10 the
first sentence of the first full paragraph should be replaced by the
following sentence (POLER #36526):

    Default   segments for psegno and lsegno are 0   and   1,
    respectively.

COMMON Command: Two numbers concerning the COMMON command were
inadvertently switched on page 10-2. The correct information follows:

  ● The default COMMON load address is '077777 (not '177777).

  ● CO 0 specifies '177777 (not '077777) as the top location in
    COMMON.

The correction for this page previously given on page 64-6 of PTU2600-064 is wrong, and should be ignored (TAR #80920).

SLIST

NEW FEATURE

<u>Maximum Line Length</u>: The maximum line length has been increased from
140 to 1024 characters.

SPOOL

NEW FEATURES

SPOOL$ Subroutine: The SPOOL$ subroutine now supports the SPOOL
command -AT option. For details, see the SPOOL$ entry in the section
on Subroutines at the end of this chapter.

-HOME Option: The -HOME option of the SPOOL$ command is no longer
supported. Its functionality has been replaced by the more general -AT
option. (-AT specifies the logical destination for the file. Its use
is explained in the Prime User's Guide (PDR4130) and the PRIMOS
Commands Reference Guide (FDR3108).

PROBLEMS FIXED

Files with Null Lines: Files that contain null lines can be spooled to
environments that have UPCASE ON.

-OPEN Key Performance: Files that have been submitted with the -OPEN
key will not have to wait so long to be printed. The improved speed
results because the spooler rescans the queue immediately after sizing
the file.

Centronics: The Centronics printer is now assigned properly.

Overprinting: The convention for overprinting used by RJE is now
observed in "no format" mode. That is, a line whose last two
characters are Carriage Return and Line Feed will be overprinted on the
previous line.

Phantom Search Frequency: The spooler phantom now searches the queues
every minute instead of every two minutes.

PROP -BACKUP: The PROP -BACKUP command leaves a file in the correct
print mode instead of putting it into "no format" mode.

Plot Files: The extra dots in plot files (for the 300 lpm
printer/plotter) have been removed.

Phantom Logout: A line that contains only an octal one will no longer
cause the spooler phantom to log out. (The control code instructs the
spooler to enter paginate mode, create a blank header line, and do a
page eject.)

AMLC Line Numbers: Printers may now be run on AMLC lines whose numbers
are greater than two digits.

SUBROUTINES

NEW FEATURES

SPOOL$:   The SPOOL$ subroutine interface has been altered to support
the SPOOL command -AT option. Changes are:

- Info(3), bit 9 is obsolete. (This bit was used to specify the
  local printer.)

- Info(13) through Info(20) is a new input parameter containing
  the sixteen character logical destination for the file. The
  destination name must be blank padded, if necessary. This
  parameter corresponds to the -AT option on the spool command
  line.

- If the logical destination name in Info(13) through Info(20) is
  used, the caller must set Info(3), bit 10.

This information updates the writeup of the SPOOL$ subroutine on pages
19-5 and 19-6 of the PRIMOS Subroutines Reference Guide (PDR3621).

DOCUMENTATION CORRECTIONS

The following information corrects errors in PRIMOS subroutines
documentation in PRIMOS Subroutines Reference Guide PDR3621.

R-mode Libraries: The R-mode libraries are not being updated. Newer
subroutines (such as BATCH$ and LOGO$$) are in the V-mode libraries,
but not the R-mode libraries. (POLER #27273).

ATCH$$: The instructions on page 4-3 for using the ATCH$$ subroutine
are misleading concerning the allowed length of a UFD name. Under the
entry for "ufdnam", the word three-word should be struck from the last
sentence, making it read, "If the reference subkey is K$IMFD or K$ICUR,
ufdnam is either a Hollerith expression or the name of an array that
specifies a ufdname to attach to." (POLER #31004).

CNAM$$: Under CNAM$$, page 4-5, the argument description:

    newlen   The length in characters of newlen.

should read:

    newlen   The length in characters of newnam.

EDAT$A: On page 11-20 the description of the format of the date
returned as the value of the EDAT$A function is incorrect. The value

of the function is the date in the form 'DD.MM.YY'. (The separation characters are ".", and not "/".) (TAR #80457).

CNVA$A: Under CNVA$A, page 11-23, the description of the argument value reads:

Returned converted binary value (INTEGER*2)

The description should read:

Returned converted binary value (INTEGER*4).

(POLERS #28894, #30051, #31044, #33398, #34322, #37313, #37976, #40060).

KWLIST: Under Default List for KWLIST, page 11-43, the listing:

words 2 to n

should read:

words 2 to n+1

CMDL$A: Under CMDL$A Sample Program, page 11-45, the line:

    * '-OCTAL   ',4,2,A$REQD,A$NONE,

should read:

    * '-OCTAL   ',3,2,A$REQD,A$OCT,

T1OU and T1IN: Under the discussions of T1OU and T1IN, page 18-4, add the following (POLER #40017):

FORTRAN 77 users should note that the data type for the argument char must be short integer.

SPOOL$: The description of the "info" array for the SPOOL$ subroutine, on page 19-6, is inaccurate and incomplete (POLER #45475):

● Info (1) is obsolete.

● Info (11), deferred print time, is an integer specifying minutes after midnight.

T$MT: Under T$MT, page 19-27, the error code description:

E$BNWD   Invalid number of words (nw <0 or >6144).

should read:

E$BNWD   Invalid number of words (nw <=0 or >6144).

User Semaphores: Internal to PRIMOS is an array of 65 semaphores (not 64) reserved for the use of user processes. PRIMOS subroutines reference a user semaphore by the index of the semaphore, an integer from 0 to 64 (not 1 to 64). Corrections concerning the number and indexes of semaphores should be made to the following pages:

Page	Incorrect Version	Correct Version
21-1	"array of 64 semaphores"	"array of 65 semaphores"
21-1	"integer from 1 to 64"	"integer from 0 to 64"
21-1	"Of the 64 user semaphores"	"Of the 65 user semaphores"
21-2	"user semaphore (1-64)"	"user semaphore (0-64)"
21-3	"user semaphore (1-64)	"user semaphore (0-64)"
21-4	"user semaphore (1-64)"	"user semaphore (0-64)"
21-5	"user semaphore (1-64)	"user semaphore (0-64)"

SLEEP$: The following information is missing from the description of the SLEEP$ subroutine on page 21-5 (POLER #34953):

<div align="center">Note</div>

Although the sleep interval is in milliseconds, SLEEP$ truncates it to an accuracy of tenths of seconds.

CHAPTER 5

DATA MANAGEMENT SYSTEMS

DBMS

NEW FEATURES

DBUTL: Two existing commands, DUMP CALC and ED R, have been extended
to access the calc files. The HELP command has been modified to
describe the new extensions.

DUMP CALC [rec-id]

The DUMP CALC command allows the user to see the contents of the calc
file associated with a particular record type. If the rec-id is not
provided, it will default to the last record type referred to. Unused
or deleted entries will not be displayed.

ED R [rec-id]

The ED R command will allow editing of the calc file in the same manner
as the existing ED commands allow it for areas and sets.

DBACP: Whenever the before-image header is read (for example, VERIFY,
RESTORE, and so on) and the conversion to Rev. 18 format has not yet
been done, then DBACP will do it. The user is notified of the start
and completion of the conversion. This replaces the REV18 command
formerly in DBUTL, which left too much chance for error, and the REV17
data base check in DBACP. Formerly DBACP would give a misleading error
message (ERROR 1) when the user attempted to access an unconverted
schema with VERIFY, RESTORE, etc.

RELOADING PRODUCTS

There are times when a specific subproduct of DBMS needs to be
reloaded — that is, the segment directory needs to be created again.
To do this it is possible to use the same job streams that were used in
the original building of the components of DBMS. However, since the
original build was run under a different UFD structure, the CPL command
files will not work as they are. The simplest way to solve this
problem is to create the following UFD structure and move the necessary
files into it before running the load. (The CPL procedure MERGE.CPL in
DBMSEX>JOBS does this.)

    DBMS   (no files)

    DBMSLB   (COPY this from top level UFD DBMSLB)

    INSERT   (COPY this from DBMSEX>INSERT)

    JOBS   (COPY this from DBMSEX>JOBS)

    BINARY   (TRECOPY into here all necessary UFDs of the form
               xxxx.B from the top level UFDs of the form
               DBMSxxxxBIN. At a minimum, copy the entire DBMSEXBIN
               because you will need the libraries to create the
               shared segments again.)

    DMLCP.B   (from DBMSEXBIN>DMLCP.B)

    ILIB.B   (from DBMSEXBIN>ILIB.B)

    SCHEMA.B   (from DBMSDEFBIN>SCHEMA.B)

    [other directories, as needed]

Now attach to DBMS>JOBS>LOAD. For each subproduct that needs to be
reloaded, run the CPL procedure by the same name. Note that if you are
doing any of the libraries (ULIB, CLIB, RLIB, ILIB, TEXTED, DMLCP, ASI,
or ASG), you should do them before other subproducts since they are
included in the others.

Now attach to DBMS>DBMSLB. The load procedures for subproducts produce
segment directories of the form DB.xxxxx in this UFD, so you will need
to use FUTIL's TREDEL command to get rid of the old version of the
subproduct(s) and then CN to produce the new one.

Before you can create the shared segments, be sure that the PL1LIB is
in the top level UFD LIB. If not, copy it from INDEX>SPL>LIB. Now
create the shared segments: CO DBMS>DBMSLB>C_LOAD.LIB.   All the new
components are in DBMS>DBMSLB and you can use FUTIL's UFDCPY to promote
them to the top level UFD DBMSLB. When this is complete, the entire
UFD DBMS can be deleted to recover space.

PROBLEMS FIXED

<u>DMLCP</u>: The emergence of the RAM Monitor in Revs. 17.6/18.0 replaced register settings for DML traces with keywords (for example: -TRACE LONG). The old register 3 setting, which was used to produce timing information that would later be formatted by *SUMMARY (now SUMMARY.SAVE), was somehow not included in the new trace options. As of Rev. 18.3, an option of -TRACE TI will restore the former capability.

The access strategy generator (ASG) has been corrected to use only MANDATORY AUTOMATIC members in devising its access strategy so that QUERY will find all the virtual records when they are composed of several records (POLER #37495).

The -VERIFY command line option introduced in Rev. 18.2 is now called -VALIDATE.

The SUPPRESS verb has been corrected to perform as specified. SUPPRESS ALL had no effect and suppression of more than one class (RECORD, AREA, SETS) would only work for the first class (POLERS #32899, #11101 and #27351).

If a subschema does not include all of the member record types of a multi-member set, FIND/FETCH FIRST rec-name OF SET set-name would sometimes fail to find the first member of the specified type, giving an exception code of 26 (POLER #34242).

Find using dbk has been corrected so that the owner directory pointer in the member record is no longer set to zero (TARS #34482, #36367).

Concurrent updating of a set file could result in lost updates therein if a program happened to return to the same set node in the next transaction before accessing any other nodes (POLERS #40402, #36531).

Set sort order with members containing a four segment sort key and automatic insertion is now maintained in sorted order (TAR #20941).

If a subschema fails to include all items, and an excluded field is the last item and is less than one word in length (for example, PIC(X)), all calc and related pointers are now updated correctly (TAR #34496).

<u>RLIB</u>: If the disk partition filled up during a SCHED session, the error message returned was EOF IN A RAM FILE. It has been changed to "DISK FULL."

The after-image log file was getting retrieval transactions written to it. This problem added unneccessary overhead to these transactions and to roll forward recovery (POLERS #34498 and #32209).

DBUTL: The REV18 command to convert a schema's before-image file to the new format has been deactivated in deference to the enhancement to DBACP described above. This protects the user from inadvertantly running the conversion more than once, which makes the before-image-file unusable.

The DUMP AFTER command would sometimes give garbled results because of an uninitialized array. This has been corrected.

The switch area (AREA X) no longer destroys data for any subsequent SET command (TAR #27966).

DOCUMENTATION CORRECTIONS AND ADDITIONS

Item Lists for MODIFY and Record Selection Expression #5:   The following DML statements can take as arguments, a list of items:

    MODIFY

    RSE5 (FIND/FETCH...VIA)

When using these statements, include no more than seven items.

This information should be added to pages 3-51 and 3-74 of the DBMS FORTRAN Reference Guide (PDR3045) and pages 3-50 and 3-71 of the DBMS COBOL Reference Guide (PDR3046).

Non-Fatal Minor Codes: The following two non-fatal minor codes have been added. Each can be returned if the error condition is raised:

Code	Meaning
nn39	Implicit Access of a set not included in the subschema
nn50	Retrieving next of set for set wherein current member removed

This information should be added to page 4-4 of the DBMS FORTRAN Reference Guide (PDR3045) and to page 4-4 of the DBMS COBOL Reference Guide (PDR3046).

FDML Reserved Words: FDML reserved words are keywords that are part of
FDML statements. Consequently, you may not use these words as variable
names. These words are:

ABORT	GET	RECORD-NAME
ALL	GO	RECORDS
ANY	IF	REMOVE
AREA	INSERT	REST
AREA-NAME	INTO	RETRIEVAL
AREAS	INVOKE	RUN
CLEAR	IS	RUN-UNIT
CLOSE	ITEMS	SCHEMA
CURRENCY	KEY	SELECTIVE
CURRENT	LAST	SET
DATA-ITEMS	MANDATORY	SETS
DBMS	MEMBER	START
DELETE	MODIFY	STATUS
DUPLICATE	MOVE	STORE
ELSE	NEXT	SUBSCHEMA
EMPTY	NOT	SUPPRESS
END	OF	TO
ERROR	ON	TRANSACTION
ERRORS	OPEN	UPDATE
EXCLUSIVE	OTHER	USAGE
EXIT	OWNER	USAGE-MODE
FETCH	PRIOR	USING
FIND	PRIVACY	VIA
FIRST	PROTECTED	WITHIN
FOR	RECORD	

The preceding information was inadvertently left out of the DBMS
FORTRAN Reference Guide (PDR3045). This information should be inserted
onto page 3-9.

FORTRAN Subschema Reserved Words: FORTRAN subschema reserved words are
keywords that are part of subschema source statements. Consequently,
you may not use those words as variable names. These words are:

AREA	INTEGER*4	REAL*4
AREAS	IS	REAL*8
CHARACTER	KEY	RECORD
DBDNS	LOGICAL	SCHEMA
DBK	NAME	SET
FOR	OF	SETS
INCLUDE	OVERLAYED	SUBSCHEMA
INTEGER*2	PRIVACY	WITH

The preceding information was inadvertently omitted from the DBMS
FORTRAN Reference Guide (PDR3045). This information should be inserted
onto page 2-3.

CDML Reserved Words: CDML reserved words are keywords that are part of
CDML statements. Consequently, you may not use these words as variable
names. These words are:

ABORT	FROM	RECORD
ALL	GET	RECORD-NAME
ANY	GO	RECORDS
AREA	IF	REMOVE
AREA-NAME	INSERT	REST
AREAS	INTO	RETRIEVAL
CLEAR	INVOKE	RUN
CLOSE	IS	RUN-UNIT
CURRENCY	ITEMS	SCHEMA
CURRENT	KEY	SELECTIVE
DATA-ITEMS	LAST	SET
DBMS	MANDATORY	SETS
DELETE	MEMBER	START
DUPLICATE	MODIFY	STATUS
ELSE	MOVE	STORE
EMPTY	NEXT	SUBSCHEMA
END	NOT	SUPPRESS
ERROR	OF	TO
ERRORS	ON	TRANSACTION
EXCLUSIVE	OPEN	UPDATE
EXIT	OTHER	USAGE
FETCH	OWNER	USAGE-MODE
FIND	PRIOR	USING
FIRST	PRIVACY	VIA
FOR	PROTECTED	WITHIN

The preceding information was inadvertently left out of the DBMS COBOL
Reference Guide (PDR3046). This text should be inserted onto page 3-9.

COBOL Subschema Reserved Words: COBOL subschema reserved words are
keywords that are part of subschema source statements.   Consequently,
you may not use those words as variable names. These words are:

ALL	FOR	SCHEMA
AREA	IN	SECTION
AREAS	IS	SEPARATE
CHANGED	KEY	SET
CHARACTER	LEADING	SETS
COMP	NAME	SIGN
COMP-3	OCCURS	SUBSCHEMA
COMPUTATIONAL	OF	TIMES
COMPUTATIONAL-3	ON	TO
COPY	PIC	TRAILING
DATA	PICTURE	USAGE
DATABASE-KEY	PRIVACY	WITHIN
DEPENDING	RECORD	
DISPLAY	RENAMING	

The preceding information was inadvertently omitted from the DBMS COBOL Reference Guide (PDR3046). This information should be inserted onto page 2-4.

OUTSTANDING PROBLEMS

CDML and FDML: These compilers do not handle on-error-clause paragraph names which begin with numbers (TAR #12613).

CDML and FDML generate a fatal error for a nonreserved word field name (TAR #37464).

A nondescriptive error message is returned when an attempt is made to open a specific area (with only one record type) that has not been included in the subschema (TAR #41434).

A table overflow error is received when a user attempts a fetch via current of set using nine data items (TAR #32202).

The all-purpose "I/O error on unit 6" error message does not indicate the file in error (TAR #82916).

The preprocessor does not close listing file after an error (TAR #20712).

On error. the manipulated output file (D_) is not being truncated (TAR #32346).

CLUP: CLUP closes virtually all file units and so cannot be run from a CPL program (TARS #40184, #35558).

DBACP: "End of file in a database file" is received during the expand set to a volume with insufficient disk space; the entry remains in the SD file (TAR #29777).

DBACP does not consistently close all opened files (TARS #34472, #36602, #37900).

DBACP does not accept lowercase input (TAR #33543).

DBACP does not always restore, expand, or delete multivolume saves and files correctly (TARS #36992, #32706, #28882, #40119, #32190, #34245, #34493).

DBACP does not handle tape errors gracefully (TARS #34481, #36464, #43922).

If after image restore file treename includes passwords and is entered incorrectly, a pointer fault is returned to the user (TAR #32211).

DMLCP: The processor does not always handle bit strings correctly (TARS #34469, #34470).

A fetch record name using eight (8) items causes access violation (TAR #41442).

DMLCP is unable to store CALCed record (with odd number byte calc key field) using FORTRAN (TAR #22772).

If a member record is deleted and then a new member stored, error 2217F is received when the processor tries to find the new member in a set where the order is 'next' (TAR #41492).

STORE should create new owner directory entries in sets that are outside the subschema (TARS #40529, #40537).

The processor allows "chunking" of date fields where appropriate (TARS #34764, #33510).

The exception condition rather than fatal error is generated for FIND NEXT RECORD rec-name in a multimember set when the required list number is lower than the current list number (TAR #37463).

A large subschema destroys the 'AREA-NAME' table (TAR #37380).

The processor is unable to access next/prior in a set following a delete ot a record occurrence (TARS #82630, #37971, #82606, #34678, #41436).

FSUBS: FSUBS does not indicate the line number of a duplicate element name (TAR #36876).

RLIB: In the RLIB subsystem, the bit map can overflow (TARS #29298, #36006).

SCHED: The description of a data item by SCHED differs from that output by SCHDEC (TAR #37614).

SCHDEC: The SCHDEC utility does not accept single quotes around a UFD and password treename (TAR #33119).

The utility truncates output source file treename to 35 characters (TAR #36005).

The utility truncates V99X picture to X (TAR #33849).

SCHEMA: The data type of 'decimal' or 'picture' does not permit the usage of the check range clause (TAR #23841).

SCHEMA should (but does not) trap errors where more than one set has member clauses defining the same record (TAR #34475).

Sign character in a picture clause in a schema has no effect. DBMS relies on subschema in COBOL to enforce the presence or absence of a sign (TAR #34766).

<u>DBMS/QUERY</u>

GENERAL PROBLEMS FIXED

<u>CPL &DATA</u>: When a CPL &DATA clause running DBMS/QUERY aborts
<u>abnormally</u> (that is, when DBMS/QUERY requests further input and there
is no &TTY statement), DBMS files are no longer left open and the
transaction is now terminated. (CLUP is required.)

<u>DBMS Fatal Errors</u>: A fatal error in DBMS no longer causes a DBMS
"infinite error loop" in DBMS/QUERY. (This loop was caught and
terminated, but caused alarming error messages.)

<u>SELECT AND DISPLAY Command</u>: If you give the command:

     SELECT AND DISPLAY ALL FROM rec-name USING format-name (CR)

and the resulting table is empty, DBMS/QUERY no longer gets an internal
error (null pointer reference) and terminates (POLER #36382).

REPORT GENERATOR PROBLEM FIXED

<u>Report Generator</u>:   An item on the cover is specified to be on line 00.
The Report Generator no longer accepts this and places the item at line
1.

CONFIGURATION FILE FORMAT

The DBMS/QUERY configuration file, SYSTEM>CONFIG.VISTA, consists of 16
lines.   Each line must appear exactly as described in these
instructions or DBMS/QUERY cannot be expected to work properly.   The
information on each line is as follows:

LINE 1: The number of characters per line on the TTY with which
          DBMS/QUERY is run. This number should be one character less
          than the actual screen width to avoid unwanted automatic
          linefeeds. The default is 79. Note that this number should
          be greater than or equal to 71 for optimal performance of
          DBMS/QUERY.

LINE 2: The number of lines per screen on the TTY with which
          DBMS/QUERY is run.   This number should be one less than the
          actual screen length to allow for the scrolling prompt.   The
          default is 23.

LINE 3:   The number of characters per <u>logical</u> line on the printer with
           which DBMS/QUERY is run. This number is the number of
           characters on the line after the printer has inserted its
           side margins. The default is 108.

LINE 4:   The number of lines per <u>logical</u> page on the printer with
           which DBMS/QUERY is run. The number is the number of lines
           on the page after the printer has inserted its top and bottom
           margins. The default is 47.

LINE 5:   The name of the master DBMS UFD, where the schemas are
           stored. The default is PDBMS.

LINE 6:   The owner password of the master DBMS UFD. The default is
           ISIS.

LINE 7:   The name of the master DBMS/QUERY UFD. The default is
           'VISTA*'.

LINE 8:   The owner password of the master DBMS/QUERY UFD. The default
           is ''.

LINE 9:   The owner password of the DBMS/QUERY CATALOG UFD, where the
           procedures, formats, and abbreviations are stored. The
           default is ''.

LINE 10:   The master UFD of the DBMS/QUERY HELP subsystem files. The
           default is 'VISTA*'.

LINE 11:   The owner password of the master HELP UFD. The default is
           ''.

<div align="center">

<u>Note</u>

</div>

> If the default name, 'VISTA>VISTA*' is used and the
> master DBMS/QUERY UFD name is left as the default,
> then the passwords of the master HELP and master
> DBMS/QUERY UFDs must be the same, since the UFDs are
> the same.

LINE 12:   The DBMS/QUERY HELP UFD. The actual data files of the HELP
           subsystem reside in this UFD. The default is 'HELP'.

LINE 13:   The DBMS/QUERY subsystem UFD owner password. The default is
           ''.

LINE 14:   The DBMS/QUERY HELP subsystem topmost level prefix. Since
           the HELP subsystem prints the actual UFD name where it is
           currently located, it deletes the topmost (protected) UFD
           names and their passwords from the HELP subsystem header.
           This prefix replaces the deleted portion. The default is
           'HELP DBMS/QUERY'.

LINE 15: The scrolling default. If 'SCROLL ENABLED' is to be the
          default, set line 15 to '1'b. If 'SCROLL DISABLED' is to be
          the default, set line 15 to '0'b. The default is '1'b.

LINE 16: The number of virtual records retrieved between the virtual
          record count. The default is 1.

<u>Note</u>

If DBMS/QUERY will be used with hard-copy terminals.
this number should be set to a large number (up to
32767). This will avoid the constant overwriting of
the virtual record count.

DOCUMENTATION CORRECTIONS

<u>PICTURE Clause</u>: The PICTURE clause in a DETAIL statement requires
quotation marks to enclose the picture item-format. These were omitted
in the Report Generator format shown on page 5-52 of the <u>DBMS/QUERY</u>
<u>User's Guide</u>. The correct format follows (POLER #36258):

```
SORT ON REGION CONTROL,                      ~
        DEPT CONTROL
TABULAR DETAIL                               ~
            ITEMNO (PIC "999999"),           ~
            DESCRIPTION,                      ~
            QUANTITY,                         ~
            PRICE (PIC "$ZZZZ.99"),           ~
            INVEN=PRICE * QUANTITY            ~
                (HEADER "INVENTORY",          ~
                 PIC "$Z,ZZZ,ZZZ.99")
GROUP HEADING FOR REGION                     ~
      "REGION NUMBER",                        ~
      REGION
GROUP HEADING FOR DEPT                        ~
      "       DEPARTMENT NUMBER ",            ~
      DEPT SKIP 1
```

<u>SELECT Command</u>: The USING clause is valid with the SELECT command only
when the SELECT command is combined with the AND DISPLAY clause.   The
examples on pages 2-5 and 2-6 of the <u>DBMS/QUERY Reference Guide</u> should
be corrected to read (POLER #45480):

```
SELECT AND DISPLAY item WHERE item = '5' /* This comment is valid~
                /* this is more of the same comment    ~
                /* note that all comments begin with "/*" ~
        USING format-name


SELECT AND DISPLAY item WHERE item = '5' ~
        USING format-name
```

Report Generator: The Report Generator prints exclamation points (not asterisks) when the number of positions implied by a PICTURE clause or by the default display width is too small to contain a value. Please substitute this information for paragraph 2 on page 11-46 of DBMS/QUERY Reference Guide (IDR4607).

OUTSTANDING PROBLEMS

SORT: When a user aborts a command level SORT by hitting the BREAK key, the table being sorted is destroyed. If the user aborts a Report Generator SORT by hitting the BREAK key, sort files are left open (even after the end of the DBMS/QUERY session).

Report Generator: The command:

    LIST DET Pl = 5/0 (cr)

(in a format) causes the following:

- The divide-by-zero condition is not raised (but should be).

- Pl is printed as 0 in the report.

- The recovery is inconsistent. In some runs, DBMS/QUERY returns to DBMS/QUERY command level normally; in others, a FATAL DBMS/QUERY ERROR is signalled and the user is returned to PRIMOS. This problem is caused by a PRIMOS limitation.

A ZERO quoted string — that is, "(ZERO 'Null')" — should be right justified since it is replacing a numeric string. It is currently left justified.

In LIST and BLOCK DETAIL, if EJECT and a footer are specified in a format, the footer is not printed at the bottom of the page within the bottom margin (except for the last page). It is printed on the line immediately below the information requested.

A report contains a page heading that has a label followed by an item of type PIC 9999. The item is preceded by extra space (POLER #36377).

MIDAS

NEW FEATURE

UPDAT$: The UPDAT$ routine now ignores the FL$RET flag entirely. This means that array will not be returned on an UPDAT$ call made with FL$RET set on. However, UPDAT$ always resets the "record locked" flag in the array.

MIDAS-COBOL INCOMPATIBILITY

Rev. 18.3 COBOL will not run with any release of MIDAS below 18.3. This problem is described more fully under COBOL in Chapter 3 (LANGUAGES).

GENERAL MIDAS PROBLEMS FIXED

KX$CRE: Setting the argument FLAGS to M$NR1W on a call to KX$CRE sets the file system read/write lock to NR1W rather than to SYS (POLER #29965).

CREATK, MPACK, REMAKE: CREATK and MPACK from Rev. 17.6 or later now work with files which have just been run through the REMAKE utility. The message "STOP -- REMAKE THIS FILE" no longer occurs while running CREATK and MPACK (POLERS #32492, #41464, TAR #82853).

Note

REMAKE is a utility whose sole use is to convert pre-Rev. 16.0 files to the current file format. REMAKE is no longer supported and is included on the master disk only as a convenience for customers converting from MIDAS revisions no longer supported by Prime.

WARNING

REMAKE is present on the master disk only as source code.

If you choose to make this utility available on your system, it MUST NOT be used as a substitute for MPACK.

KBUILD: KBUILD now correctly adds additional primary key and data record information to a MIDAS file that already contains data (POLER #33126).

KBUILD has used file unit 1 for a temporary file when building secondary index 1, file unit 2 for index 2, and so on. Therefore, users running KBUILD from a command file sometimes found that KBUILD interfered with the running of their command file or vice-versa. KBUILD now asks the system to assign its file units, eliminating the interface problem (POLER #45069).

KBUILD now accesses FTN binary input files correctly, skipping over the 16-bit word count in the first word of each record (POLER #40428).

PARM.K and PARM.K.INS.FTN: In PARM.K and PARM.K.INS.FTN, the constants M$DPFP and PF$PRE are now declared (POLER #40419).

Array Conflicts: In previous versions of MIDAS, making calls to process another MIDAS file between a record lock (LOCK$ call) and a record update (UPDAT$ call with FL$RET set) would cause problems on a NEXT$ call made immediately after the UPDAT$ call (POLER #40981). Because UPDAT$ now ignores the FL$RET flag, this concurrency error no longer occurs. It is now possible to make MIDAS calls to another file between LOCK$ and UPDAT$ calls without causing array conflicts.

NEXT$ Operations: At Rev. 18.3, reading partial keys using NEXT$ with the FL$FST, FL$NXT, FL$PLW, and PL$PRE flags set off does not significantly degrade performance. MIDAS no longer reads every record to the end of the file before returning an error 7 (record not found). An error 7 is now returned as soon as the next partial key encountered does not match the one being searched.

PROBLEMS FIXED CONCERNING COBOL AND MIDAS

Several problems have been fixed concerning the use of COBOL with MIDAS. These are listed under COBOL in Chapter 3 (LANGUAGES).

DOCUMENTATION CORRECTIONS

The following changes should be made to the MIDAS User's Guide, (IDR4558).

CREATK and File Read/Write Locks: Page 2-10 states that a read-write lock setting for N readers and N writers is "equivalent to the PRIMOS RWLOCK setting of 3". This is incorrect.

The manual should state that this read/write lock setting is "equivalent to the FUTIL Read and Write access, which has a value of 3".

GDATA$ Calling Sequence: On page 6-47, the line describing bufsiz should read:

bufsiz   Size of buffer in bytes.

(The manual currently says "words" instead of "bytes".)

FORTRAN Record Updates: On page 6-48, add the following sentence to the end of the paragraph entitled UPDATING A RECORD:

MIDAS calls that process other files can be made between calls to LOCK$ and UPDAT$.

UPDAT$ Calling Sequence: On page 6-52, insert the key argument between the buffer and array arguments in the UPDAT$ calling sequence. The calling sequence should now read:

CALL UPDAT$ (funit, buffer, key, array, flags, altrtn, index,
             file-no, bufsiz, keysize)

Flags for UPDAT$: On page 6-54, add the following note to the bottom of Table 6-13:

FL$RET Ignored by UPDAT$. Note that UPDAT$ always resets the flag in the array which indicates whether or not a record is locked.

START and Locked Records: Page 7-18 states that a 90 error is returned when a user attempts to perform a START on a locked record. This should read that a 90 error is returned on a subsequent read (POLER #37101).

Page 7-18 states that a START performed on a locked record will cause the record to be unlocked. The START operation does not alter the locks. Also, a subsequent read operation has no effect on the locks. In addition, the manual states that a 91 error is returned (if the above happens) to the person who originally locked the record. This does not occur (POLER #37100).

Reading a MIDAS File: If a record in a MIDAS file will be read into a PL/I structure, the key should contain an even number of bytes. If this is not possible, you must then include a one-byte filler at the beginning to insure that the MIDAS record is aligned properly. This information should be added after the bullet list on page 9-9.

OUTSTANDING PROBLEM

CREATK: The MODIFY option in CREATK corrupts the secondary key sizes if defined as ASCII and will not permit users to change support of synonyms (POLER #32195).

PRIME/POWER

PROBLEMS FIXED

File Create: You can now use the last byte of a non-minimum options
fixed length, non-text file during file create. (TARS #29304, #45078)

CREATE CHANGE: Performing a CREATE CHANGE on a descriptor that was
either a bit string with an odd number of characters or ASCII with an
even number of characters no longer causes subsequent FINDs to be
incorrect. (TARS #45077, #29046)

During CREATE CHANGE dialog, NUM6 variables are no longer listed as
NUM5 (TAR #34649).

CREATE CHANGE now allows changes to the last field (TAR #82727).

Variable Names: In a procedure, variable names of length 3 are now
recognized (TARS #35888, #37512).

FIND: FIND A 'xxx' AND B 'yy' where A is indexed (partial
specification) and B is non-indexed (full specification) now finds the
specified records (TAR #45084).

You can now insert parameters into a FIND command without needing a
period on the FIND command line (TAR #29579).

You can now use parameters on a multi-line FIND statement (TAR #29580).

CREATE PUBLIC: A procedure file created during a CREATE PUBLIC is no
longer saved as a CREATE PRIVATE (TAR #45879).

Report Heading: Character variables in the Report Heading no longer
produce spurious output when assigned numeric values (TAR #35804).

Long Procedure Line: The POWER editor no longer corrupts a long
procedure line (TARS #27579, #27518).

Maximum Time Calculation: The maximum time calculation is no longer in
error if the time period spans midnight (TARS #37611, #29358).

Report Text: Text in reports are no longer limited to seven lines (TAR
#35697).

Report Title: A decimal variable in the Report Title is now recognized
(TAR #27485).

PRINT: The alias in the PRINT command now accepts periods (TAR #30231).

A PRINT of text no longer causes truncation of the last two characters (TAR #35384)

The FILE option of the PRINT command now accepts passwords (TAR #31135, #32047).

SELECT: SELECT no longer hangs while another user performs a CREATE (TAR #35790).

CREATE: A procedure with CREATE no longer returns command to the terminal at the end of CREATE, rather than at the end of the procedure file (TAR #82431).

POWER no longer creates unwanted secondary keys 15, 16, and 17 with minimum options-no text CREATE (TAR #34246).

DESC: When password option is used, blank lines appear on the DESC command for elements requiring higher security levels (TAR #33057).

Procedure Names: A seven-character procedure name will no longer overwrite an existing six-character procedure name (TAR #37795).

CHANGE USING SCREEN: CHANGE USING SCREEN will now change all the records in a set.

Validation now functions correctly during CHANGE USING SCREEN.

During a CHANGE USING SCREEN the last MIDAS index will now have the key changed, as well as the data.

Comments: Comments in a procedure are no longer accepted as valid input in POWER subsystems (as they were in Rev. 18.2). The comment line and ensuing prompt will appear on the terminal, but will not be read by the subsystem.

PROTECT FOR: PROTECT FOR username no longer causes nullification of the individual command file, if it is the first PROTECT FOR command issued.

DOCUMENTATION ADDITIONS AND CORRECTIONS

The following additions and corrections apply to the PRIME/POWER Guide (PDR3709).

HEADING: Unless the user has created a HEADING for a file, all descriptors from the file will be displayed using POWER's default formats as listed below:

Data Type	Default Display
NUM1 (R*8)	-ZZZZZZZ.##
NUM2 (R*4)	-ZZZZZZZ.##
NUM3 (I*2)	-ZZZZZ
NUM4 (I*4)	-ZZZZZZZ.##
NUM5 (Decimal)	-ZZZZZZZ.##
NUM6 (Comp-3)	-ZZZZZZZ.##

If these default displays are not desired, the user should create a heading (using HEADING CREATE).

This information should be added to the table and discussion of Numeric Data Types on page 4-4 and of Data Types on page 19-3.

MIDAS Search Descriptor: A MIDAS search descriptor may not be added or have its data type changed with the ADD and CHANGE options of the CREATE command.   If a user desires to add a new search descriptor (or change a display descriptor to a search descriptor) or change the data type or length, he or she should perform the following steps:

1. Dump all data to a file.

2. Destroy the file in POWER.

3. Exit POWER and TREDEL the data file.

4. Enter POWER and re-create the file as desired.

5. Batch add the data.

If any descriptor names are being changed for the new file, these name changes should be made on the old file (using the Change Descriptor option), or the data in those descriptors will not be added.

If a user has data in a file, the method described above should be used to modify all types of files (TAR #33638).

This information should be added after the discussion of CREATE Options on page 4-22.

REPORT: Page 9-25 (second paragraph from bottom) states that you can make several versions of the same REPORT. It goes on to say that you should change to first line in the file to read:

    "CREATING REPORTnn"

The manual should say that you change the first line of the REPORT to read:

    "REPORT CREATE"

(POLER #48062).

CHAPTER 6

FORMS AND FED

FORMS

PROBLEM FIXED

Terminal Roll: The problem in the PT45 driver that caused the terminal
to roll every time something was written to lines 25-48 has been solved
as far as possible. The problem is that whenever an attribute has to
be written to the terminal, then the line has to be on screen.   This
has been minimized by writing attributes only when they are
non-default.

FED

PROBLEMS FIXED

Terminators: Unused constant field terminators are no longer deleted.

Screen Stability: FED's forms have been redesigned to take advantage
of the new PT45 driver; the screen no longer rolls.

CHAPTER 7

COMMUNICATIONS

DPTX

PROBLEMS FIXED

DYNT: A DYNT instruction was added to allow references to BD$LST from
ring 3. The change affects module BDVLIB.PMA.

WRITE: A write data stream with nulls embedded no longer causes
PT45DSC to redisplay the last screen and to thereby lose the data from
the write command.   This change affects module PT45DSC.FTN (POLER
#32109).

TELENET® and Large Data Streams: PT45DSC no longer rejects large data
streams when a user is logged in through TELENET. This change affects
module PT45DSC.FTN (POLER #35025).

Changes in Terminal Characteristics: PT45DSC   no   longer   changes
terminal characteristics (that is, XOFF, DUPLEX) after exit from the
program. This connection affects module PT45DSC.FTN.

CLEAR: PT45DSC no longer exits with a Prohibited Field error message
on the first transaction after the CLEAR key has been depressed. This
change affects module PT45DSC.FTN (POLER #45425).

Station Names: PT45DSC now allows 32 character station names as
advertised. Previously, only six characters were accepted. This
connection affects module PT45DSC.FTN.

Attribute Overflow: PT45DSC will now exit with the message TERMINAL
ATTRIBUTE OVERFLOW when more than 256 attribute characters are
transmitted to the terminal. This change affects module PT45DSC.FTN.

OUTSTANDING PROBLEMS

BSCMAN: In cases of the host's "timing out" (that is, not responding
with an ACK or NAK to text messages sent by the emulator DPTX/DSC),
BSCMAN incorrectly does not send ENQ's every 3 seconds. Instead, after
10 seconds, an EOT is sent. This problem will only occur if a host
does not respond in a timely manner to text messages from DPTX/DSC.

PT45DSC: As part of the DPTX/DSC product, PT45DSC transmits only data
that has been modified. In certain cases this is inconsistent with the
3277 it emulates.

PT45DSC, running as part of the DPTX/DSC product, will not run
correctly at 9600 bps. Because the PT45 is a slow device compared to

the Prime, the PT45's buffers can be overrun, resulting in "broken" screen formats and scrambled messages (POLER #29480). The temporary solution to this is to run the PT45 at 4500 bps or to insure that the DMQ size for that line is set at its default value.

TM3270: TM3270, communicating with COMMAND devices, as part of the DPTX/TSF and DPTX/TCF products, uses chained WRITES to acknowledge receipt of READ MODIFIED data. This is acceptable to the 3271 Mod 2. However, the second generation BSC control units (3274 and 3276) do not allow this. Because of this, it is not possible to run DPTX/TSF with second generation control units.

DPTX/TCF: In the DPTX/TCF product, if a host writes alphabetic data into a field defined as NUMERIC ONLY (which is legal in 3270 protocol), and this data is transferred to an IBM control unit attached to the Prime via DPTX/TSF, subsequent updates of the virtual buffer by TCF will be rejected. TCF will report this problem as HOST DOWN. As a temporary way to work around it, the application can be changed so that the field being written into is not NUMERIC ONLY. This can be done by changing the attribute sent out to define the field.

The ERASE INPUT key used on a terminal connected to an IBM control unit attached to the Prime via DPTX/TSF will not cause the virtual buffer to be updated. This is only a problem for those using TCF. (POLER #35025)

DPTX/TSF: Users of DPTX/TSF using DISLOG YES as a config option should be aware that TTYNOPing does not prevent the AMLDIM from performing logout abort checks when DISLOG YES is specified. This is a PRIMOS bug, and a POLER has been submitted. The temporary way to avoid the problem is to not specify DISLOG YES as a config option.

DPTX/DSC: If a data stream sent to DPTX/DSC includes a WRITE or ERASE/WRITE command without any WCC or data following the command, OWLDSC will take an ACCESS VIOLATION and the emulator will cause certain of the virtual buffers to be overwritten. In addition, a response to this data stream can take up to 10 seconds. As a temporary measure to correct this, insure that the data stream always has a WCC following the WRITE or ERASE/WRITE command.

WARM START: In a WARM START condition, if a ring 3 user is attached to DPTX and is currently selected, the "hard lock" will not be reset. (An 'unlock' message is not sent to the selected user.) The way to avoid the problem is to turn the terminal power off and then on again and to depress the F15 key (RECOVER key). The virtual buffer remains unchanged from the last successfully completed host transmission.

PRIMENET

The following material updates the PRIMENET Guide (IDR3710) and the two Technical Updates, PRIMENET, Rev. 17 (PTU2600-065) and PRIMENET, Rev. 18 (PTU2600-069). Included are changes to NETCFG, several new NETLINK commands, and two corrections to the information about the X$STAT subroutine.

NETCFG

New Features

Dialog Changes: The passwords used by FAM-II were initially called ring0-ring0 passwords. They are now called node-node passwords, and NETCFG's dialog with the user displays that term.

References in the dialog to "naming spheres" have been removed.

Problem Fixed

-PASSWORD: When the -PASSWORD command line option was used, changes to node-node passwords could be made only if the user had responded "yes" to the "Review old network configuration" question. This problem has been corrected.

NETLINK

The material that follows should be added to the NETLINK description in PTU2600-069.

New Features -- General

Improved Non-Prime Support: NETLINK now supports the full 1980 standard for X.3 and X.29. This means it is now possible to connect to non-Prime hosts that require full support of the international parameter set. There are new NETLINK commands, described below, to set the value of some of these parameters.

In addition to the complete international parameter set, NETLINK now supports a complete set of connect packet specifications. These specifications are used for communication with hosts having connect packet format requirements.

New Features -- NETLINK Profile Commands

NETLINK now supports a standard set of profile modifiers that can be used in several different situations within NETLINK. A circuit's profile consists of two different parts: the operational parameters and the connection parameters.

Operational Profile Parameters: The operational parameters are those that affect the basic operational environment. Examples of operational parameters are the polling rate (set by the POLL command), or DEBUG options.

Connect Profile Parameters: The second part of a circuit's profile is the specific connect fields that are used to establish the connection. Examples of these are Facilities (FCTY command) and User Data (DATA command). The connection portion of the profile is only used when establishing a connection to a remote host. The operational portion of the profile is used throughout the life of the circuit.

Profile commands may be used in the following three ways:

As command line options to the NETLINK command:

    OK, NETLINK -FCTY 1 1 -POLL 1

As commands to NETLINK:

    OK, NETLINK
    [NETLINK Rev. 18.3]

    @ FCTY 1 1
    @ POLL 1

As options to the "C" command to NETLINK:

    OK, NETLINK
    [NETLINK Rev. 18.3]

    @ C 999 99 -FCTY 1 1 -POLL 1

Using profile commands as options on the NETLINK command line modifies the "default" profile for every call. Using them as subsystem commands to NETLINK modifies both the "default" profile and the operational profile of the current circuit. Applying them as options to the "C" command modifies only the connect and operational profile of the circuit being established.

NETLINK's Previously-existing Profile Commands

The commands discussed below, which have always existed in NETLINK, are now classified as profile commands.

Operational Profile: The following commands are now treated as Operational Profile commands as described above:

Command	Description
DEBUG $\left\{ \begin{array}{l} \text{ON} \\ \text{OFF} \\ \text{DUMP} \end{array} \right\}$	Control debug printout
POLL tenths_of_seconds	Set terminal input polling rate

Connect Profile: The following commands are now treated as Connect Profile commands:

Command	Description
DNIC data_network_id_code	Set DNIC
PORT port_number	Remote port to connect to
FCTY facilities_bytes	Set a facilities field
PRID protocol_id_bytes	Set the protocol ID field
DATA text	Set user data field, no parity
MDATA text	Set user data field, marked parity

The FCTY and PRID commands now require decimal input. Input was formerly octal. This change standardizes the usage of numbers in NETLINK. All commands that take numbers now require decimal numbers.

In addition, the FCTY command may have ASCII mnemonics for specific facility parameter/value byte pairs. The following mnemonics are available:

CHARGE	Set reverse charging
NO_CHARGE	Set no reverse charging

A "NC" command to NETLINK is the same as specifying "C address -FCTY NO_CHARGE".

NETLINK's New Profile Commands

Operational Profile: NETLINK now has the following new operational profile commands.

▶ ESCAPE escape_character

This command allows a user to change the escape sequence from "CR @ CR" to "CR escape-character CR", where CR means carriage return. This command is useful when running NETLINK from a TELENET PAD because the PAD would trap the "CR @ CR" before NETLINK has an opportunity to interpret it.

▶ SPEED bits_per_second

▶ BPS bits_per_second

Either of these commands tells NETLINK how to respond for requests from the remote host for terminal speed. Some hosts will hang unless they are provided a valid terminal speed. Most hosts do not expect a value greater than 1200 bps. These commands set up X.3 parameter 11.

▶ TTP id_number

▶ TTP name

This command tells NETLINK what the user's terminal type is. This command only has an effect over TELENET, and only to a few types of hosts. Those hosts are the ones which "read the terminal type," and are those which perform their own echoing and carriage control. Allowed terminal names are: OWL, FOX, BEEHIVE, VT50, and PRINT.

Names are translated into the appropriate value for TELENET parameter 23. If a number is specified, then this is used as the value for TELENET parameter 23.

▶ MODE $\begin{bmatrix} \text{REMOTE\_ECHO} \\ \text{NO\_REMOTE\_ECHO} \end{bmatrix}$

This command is extremely useful for Prime to Prime connections whenever the user expects to be using services which perform remote echoing, such as OAS and screen editors. REMOTE_ECHO turns on this mode, and NO_REMOTE_ECHO turns it off. Remote echo mode sets NETLINK to operate in character-at-a-time mode, whenever the terminal is put into half duplex mode. When the terminal is in full duplex mode, NETLINK observes normal forwarding characteristics.

Note

Remote echo mode may drastically increase costs over public data networks.

Connect Profiles: NETLINK now has the following new connect profile commands:

▶ LDATA text

Same as the DATA command, except that the user data starts at and overlays the protocol ID field.

▶ LMDATA text

Same as the MDATA command, except that the user data starts at and overlays the protocol ID field.

▶ TO address

This command establishes a destination address. As an example, "C address" and "C -TO address" are the same command. If either is entered as a command to NETLINK, then a command of "C" with no address will connect to the default address. When this option is used on the NETLINK command line, then an automatic connect is issued to the remote system. In addition, when the circuit is disconnected, NETLINK will perform an automatic QUIT command. This allows the user to connect to remote systems, without ever entering the NETLINK subsystem, as in this example:

    OK, NETLINK -TO REMSYS
    [NETLINK Rev. 18.3]

    REMSYS Connected
    user session with remote system
    user types "LOGOUT"

    REMSYS Disconnected

    OK, /* user now returned to the local system

Other New NETLINK Commands

A command has been added to print out the profile for a circuit or to print out the default profile.

▶ PROFILE DEFAULTS

▶ PROFILE

The command PROFILE with no argument prints out the profile of the current circuit. PROFILE DEFAULTS prints out the default profile used for all new connections.

NETLINK Problems Fixed

The enhancement to support completely the international X.3 parameters fixes several problems associated with using NETLINK to non-Prime hosts. These include most cases of call rejection or calls hanging due to protocol errors. These enhancements correct problems reported in TAR #32437.   In addition, NETLINK can now handle files longer than 32K bytes. This problem had no TAR number.

Documentation Corrections

The following corrections should be made to the <u>PRIMENET   Guide</u> (IDR3710).

<u>X$STAT Subroutine</u>: The entries for keys XI$XTP and XI$PTX on page 3-18 were reversed, and should read:

    XI$XTP   Returns PRIMENET name of an X.25 address

    XI$PTX   Returns X.25 address of a PRIMENET name

The description of array2(13) under XI$VCD on page 3-19 should read:

    array2(13)   node number or logical line number

RJE (REMOTE JOB ENTRY) PRODUCTS

PROBLEMS FIXED - ALL EMULATORS

ENABLE: Once the symbiont has been phantomed, the ENABLE command
handler now waits longer for the symbiont to activate. Previously, the
workstation might timeout before the symbiont had time to activate. In
this situation, the workstation generated an incorrect error message:
either "Symbiont has crashed." or "Symbiont command ignored changing
receive filename.".

Workstation from CPL: The workstation may now be run from a CPL
program.

PROBLEMS FIXED - HASP

Premature EOF on Receive file: After a recover, receive translation
sometimes looped infinitely and printed repeatedly the message:
"premature EOF on receive file". This problem has been corrected; the
message is printed once, and translation continues with the next file
(POLER #32712).

Spurious Symbiont Warning Messages: A correction was made to prevent
some spurious symbiont warning messages.

Transmit Translation: Transmit translation code occasionally lost the
last two characters of a line, producing SCB without characters. This
error has been corrected.

Transmit and Receive Translation: The EBCDIC translation tables have
been corrected as follows (POLER #35344):

- New characters for [and] have been added.

- All varieties of | (long, short and double) have been fixed in
  the receive processor.

- ~ and ^ have been corrected.

Running to JES3: Some sites send three extra control characters with
their transmitted data, in addition to the control characters expected.
The receive blocksize has been extended to prevent the block from being
NAKed indefinitely if these extra characters are present (POLER
#33064).

PROBLEMS FIXED - GRTS

Symbiont: Cancelled T files are no longer misinterpreted as having bad
headers. They are now (rightly) deleted (POLER #35230).

PROBLEMS FIXED - X80

Receive Translation: The EBCDIC-to-ASCII conversion table has been
corrected. The following entries have been modified (POLER #37307):

        :152   converts to :374 |
        :241   converts to :376   ~
        :255   converts to :333   [
        :275   converts to :375   ]
        :340   converts to :334   \

PROBLEMS FIXED - 200UT

Lost Print Lines: Not all received print lines were being passed
through to the EOFDET procedure. This problem has been corrected.

Symbiont: A problem in protocol handling, which caused the line to
hang, has been corrected.

DOCUMENTATION CORRECTION

The maximum value under HASP for the BLOCK command's blocksize
parameter is now 512 bytes. This value was previously 506, as shown on
page 4-3 of The Remote Job Entry Guide (IDR4036). On this page, please
change the line:

    HASP   blocksize <= 506

This line should read:

    HASP   blocksize <= 512

(POLER #33494).

CHAPTER 8

HARDWARE PERIPHERALS

PT25

DOCUMENTATION CORRECTIONS

The following corrections concerning the PT25 terminal should be made
to the PT25 Guide (IDR4603):

- In the second paragraph on page 2-1 delete the sentence
  beginning "In addition..." and ending with "...parameters."

- Delete page 2-4 entirely.

- In Table 2-1 on page 2-5 delete the entries for:

      Line-Turnaround
      Parity Check
      Refresh Rate
      Reverse Channel

- Delete page 2-7 entirely.

- Delete Section 6 entirely (page 6-1 through page 6-5).